

HEALTH DEPARTMENT.

REPORT

ON THE HEALTH OF THE

CITY OF LIVERPOOL

DURING THE YEAR

1922

WITH OBSERVATIONS UP TO JUNE 30TH, 1923.

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LIVERPOOL.

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Ministry of Health Tables of Population, Births, Deaths, Infantile Mortality and Infectious Sickness. Tables I, II, III and IV.

Public Health (Tuberculosis) Regulations, Notifications received.

Table of Total Deaths registered in the City.

PREFACE.

A brief outline of the sanitary progress of Liverpool has from time to time been given in previous Annual Reports, and special references to the subject were made last year. It is not necessary, therefore, to say more than that the sanitary operations carried on in the City have wholly removed the old stigma of unwholesomeness, and the improvement in the health of the City, as gauged by the diminution in sickness and mortality, places it well in the forefront of the great towns.

The Birth Rate is 26·1, as against 26·8 in the previous year; and the Death Rate 14·6—the lowest recorded with the exception of 1921, when it was 14·3. The Infant Mortality Rate, which is always the index of the sanitary condition of an area, is 96 per 1,000 births, this being the lowest ever recorded in the City of Liverpool, and the first time the rate has fallen below 100.

During the year, some important adjustments in regard to co-operation in health-administration of the various Merseyside Boroughs were reached. The Medical Officers of Health concerned, agreed that in the event of any disease scheduled under International Agreements arising in any part of the area, the fact should be forthwith reported to the Port Medical Officer for communication to the Consular Body or Bodies. It was also agreed that in the event of such outbreak assuming grave proportions, the Medical Officer of Health of the area in which the case arose should on request be entitled to assistance from the staff of any other of the Riparian Authorities. This agreement is acted upon, but has not yet received the ratification of the various Councils affected.

A further question has been under consideration in connection with Smallpox; it is agreed that the multiplication of Smallpox Hospitals is costly, difficult, and highly undesirable, and the possibility of unification of the system has been under discussion.

At present, arrangements have been made with various Sanitary Authorities on the eastern side of the Mersey by which any case of Smallpox which may arise will be admitted into Sparrow Hall Hospital provided that accommodation is available. That Hospital at the present

time is only large enough to meet the needs of Liverpool; when the Hospital was constructed, provision was made for extension, the administrative section being large enough to meet the necessities of a largely increased number of inmates. On the other hand, the existing conditional arrangement to receive patients cannot be wholly satisfactory to the parties participating in it, since it is liable to termination at any moment which the Liverpool Authorities consider desirable; in other words, the assistance of Liverpool cannot, under the existing arrangement, be relied upon at the very time when it is most likely to be needed.

Abattoir
Accommoda-
tion.

The provision of abattoir accommodation unfortunately has not been advanced as was hoped, but a site of about $7\frac{1}{2}$ acres, contiguous to the Stanley Cattle Market (which itself occupies $7\frac{1}{2}$ acres), and approached by railway sidings, was purchased in 1922 by the City Council, and is ear-marked for the express purposes of providing for a re-construction of the whole area with a modern abattoir, meat market, and cattle market, and suitable accommodation for allied trades. At the instance of the Markets Committee, plans have been prepared for the carrying out of the scheme on the most modern lines.

Negotiations have again been opened with the Mersey Docks and Harbour Board with a view to providing a landing-place on the Liverpool side of the Mersey for imported cattle, but it does not appear that delays in deciding this question need interfere with the proposed developments at Stanley.

Few, if any, now dispute the grossly unwholesome conditions under which the slaughtering of animals and the processes necessary for the preparation of meat are carried on, nor are those concerned unfamiliar with the unnecessary sufferings to which animals are subjected in the present surroundings.

A comparison between the Liverpool Abattoirs and an ordinary up-to-date abattoir is strikingly illustrated in the photographs which are reproduced herein, and they merit attentive scrutiny.*

Housing.

The gravity of the position in regard to Housing still remains, notwithstanding that during the last three years upwards of 5,000 houses

* Facing page 162.

have been erected by the Corporation on sites indicated in the text, in addition to 488 bungalows converted from army huts. The number of houses erected by private enterprise, however, is negligible, and there are at the moment several thousands of applications from persons housed under bad conditions, who are well able to pay reasonable rents for accommodation could it be found.

It is not necessary to dwell upon the position of families whose accommodation is limited to only one room for all purposes, but it is clear that such conditions are gravely prejudicial to the public health and the welfare of the City. Incidentally, there is an increased demand upon the hospitals for treatment of minor ailments which under ordinary conditions could be dealt with at home; requests for admission to maternity hospitals or homes, increase for the same reasons. So far as Tuberculosis is concerned, risks of spread are accentuated, and many instances arise in which persons after leaving Sanatoria quickly relapse into their former condition on returning to their overcrowded rooms. Urgent and pitiable pleas are put forward by applicants from these and from many other points of view, such as interference with education through ill-health of the children living under these conditions.

A large amount of the time of the Staff—particularly the Health Visitors—is occupied in connection with difficulties arising from the want of adequate housing accommodation.

The Housing Committee are keenly alive to the unfortunate plight of thousands of persons who are applying to them for houses, and whom it will be impossible to house for a number of years at the present rate of building. It is, therefore, a matter of urgent necessity that every possible facility should be accorded private builders in order to induce them to resume their normal industry.

References will be seen in the text to the steps taken to lessen the injury to health and waste of fuel by the emission of excessive and unnecessary quantities of smoke from the chimneys connected with works and factories. Smoke
Nuisance.

It will be interesting to recall that some years ago a course of instruction in the utilisation of fuel and prevention of smoke was given at the School of Hygiene to stokers and enginemen, their employers

paying the fees. In this and other ways the employers showed that they realised the mischief caused by the pollution of the atmosphere. It is much to be regretted, however, that an unavoidable nuisance of this character continues to the great extent which it does.

Venereal
Diseases.

The Committee dealing with Venereal Diseases has, for several years, felt that the system at present in force in regard to these diseases will be rendered more effective, when a legal requirement is imposed upon any infected person to seek medical advice so soon as he is aware that he is infected, and to remain under treatment until he is free from infection.

Proposals to this end have been approved by the Liverpool City Council, and by the whole of the Merseyside Boroughs, and an application has been made to the Ministry of Health to receive a Deputation on the question of the advisability of issuing an Order for dealing specifically in the Merseyside area with these diseases. The Ministry, however, desired the matter to be postponed pending the Report of the Trevethin Committee, which had then been appointed to consider the subject of Venereal Diseases. This Committee has now reported, and it will be seen on pp. 108-110 that the subject received consideration, so far as the terms of reference permitted. The Trevethin Committee, however, recognised the necessity for special measures in special areas.

Ability to
pay for
benefits
received at
Welfare and
School
Clinics.

A very close investigation into the subject of the means of expectant mothers, as well as of the means of parents of infants and children brought to Clinics, was made by the Education Committee and by the Health Committee early in 1922, with the result that it was found that the individual and personal enquiries made of each person attending the Clinics, and the records kept relating thereto, were entirely satisfactory, and it was also found that wherever adequate payment was possible, the applicant was referred to a private doctor. These results were reported to the Council on April 5th, 1922.

Visit of
Ministry of
Health
Officers.

Towards the close of the year a valuable stimulus was given to sanitary administration by a visit from experienced officers connected with the legal, medical and financial departments of the Ministry of Health, who spent a week in Liverpool with the object of studying the methods in operation, and their results, and also with the view, if possible, to suggest any points in which economies might be exercised or

in which adjustments appeared desirable. The attention of these officers was directed more especially to what are known as the grant-earning services, branches of public health administration which receive pro rata Government grants, namely, Maternity and Child Welfare, Venereal Disease, Tuberculosis.

A letter dated 16th May, 1923, from the Minister, conveyed the views of his representatives, and these are now receiving close and careful consideration by the Committees concerned. One point in which efficiency and economy go hand in hand is likely to be achieved, viz., the amalgamation of the Medical Inspection of School Children and the medical supervision associated with Welfare work. The Medical Officer has in previous Reports dealt very fully with this question, and pointed out the advantages which will accrue when it is given effect to, and since both the Ministry of Health and the Board of Education express their approval of it, it may be hoped that these proposals will be agreed to.

E. W. HOPE,

Medical Officer of Health

PUBLIC HEALTH DEPARTMENT,

MUNICIPAL BUILDINGS,

LIVERPOOL, 1st July, 1923.

STATISTICS

RELATING TO

BIRTHS, DEATHS, AND CAUSES OF DEATH, &c.,
ZYMOTIC DISEASES AND THEIR INCIDENCE.

SUMMARY

OF

VITAL STATISTICS FOR 1922.

Area of City	21,219	Acres.
		(33 square miles)
Population (estimated to the middle of the year)	823,095	
Births	21,467,	Birth-rate 26·1.
Deaths	11,992,	Death-rate 14·6.
Infantile Mortality	2,052	Deaths under one year.
Infant Mortality Rate	96	per 1,000 Births.
Zymotic Death-rate (7 principal Zymotic Diseases)	0·65	per 1,000.
All forms of Tuberculosis (including Phthisis)... ..	1·6	per 1,000.
Phthisis Death-rate	1·3	per 1,000.

BIRTHS.

The number of births recorded during the year 1922 within the City was 21,467, equal to a rate of 26.1 per 1,000 of the population, the average of the previous five years (1917-1921) being 25.0. Of the total births, 10,894 were males and 10,573 were females. The number of illegitimate births was 762, or 3.5 per cent. of the total births, 403 being males and 359 females.

The Registrar General intimated that 11 of the births registered in the City should be deducted as non-resident, and this has accordingly been done, the above figures being the net numbers after the deduction has been made.

The birth-rate in the City of Liverpool is considerably above the average of the great towns, which is 21.4 per 1,000 of the population, as well as of England and Wales taken as a whole, where the rate is 20.6 per 1,000, for the year 1922.

The following table shows the *natural* increase of population, that is, the excess in the number of births as compared with the number of deaths during the year 1922, in the several districts of the city. The net result in the city shows an increase of births over deaths of 9,475.

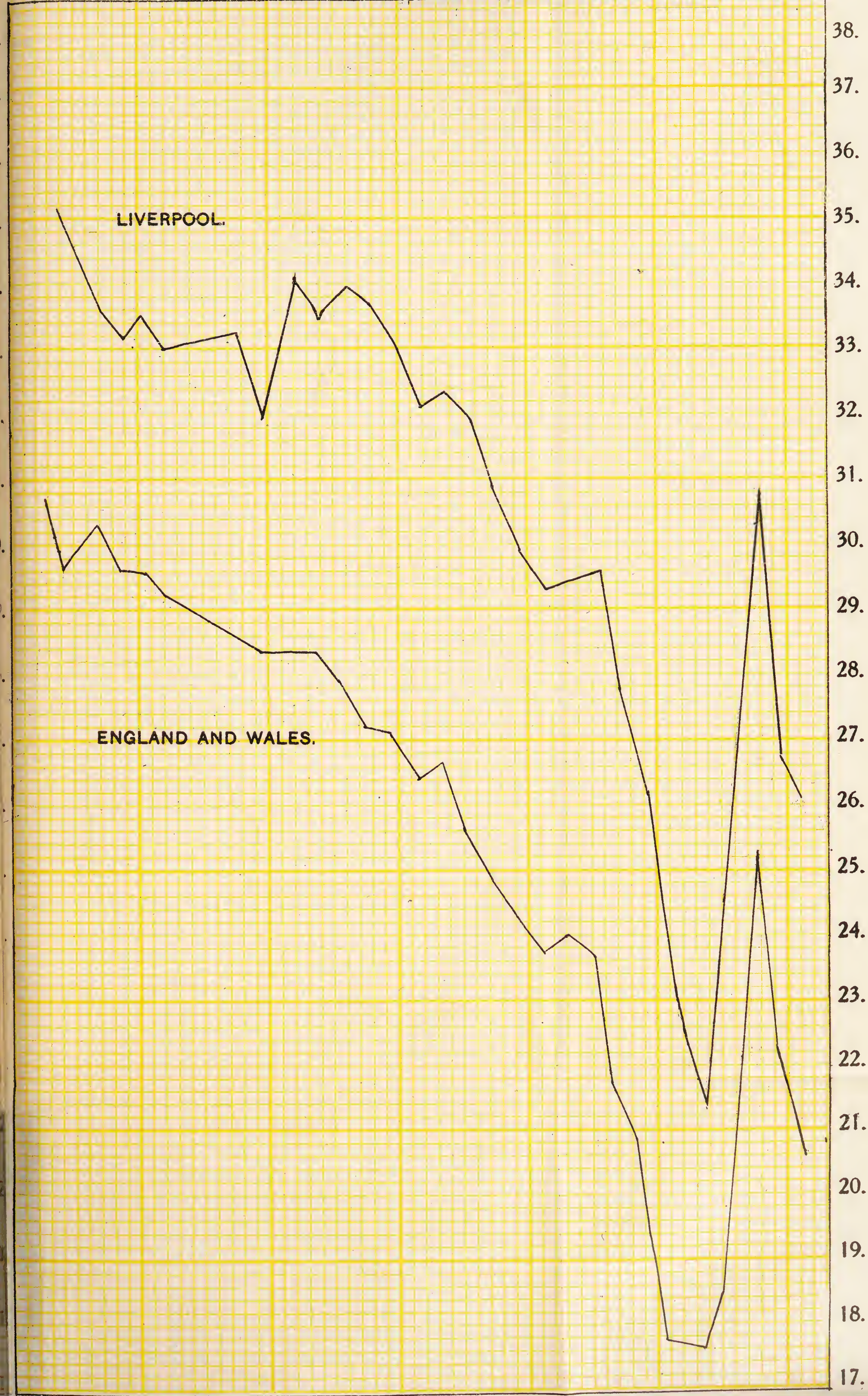
DISTRICTS.	Estimated Population.	Births.	Deaths.	Number of Births over Deaths.
Scotland	46,258	1,721	920	801
Exchange	35,716	1,203	822	381
Abercromby	46,368	1,142	806	336
Everton	127,691	3,757	1,947	1,810
Kirkdale	71,561	2,001	1,112	889
West Derby—West	93,841	2,459	1,345	1,114
Toxteth	111,104	3,104	1,620	1,484
Walton	85,362	1,688	975	713
West Derby—East	79,276	1,927	993	934
Wavertree	45,659	931	509	422
Toxteth—East	34,972	558	429	129
Garston.....	29,449	708	357	351
Fazakerley	6,205	116	63	53
Woolton	9,633	152	94	58
Total	823,095	21,467	11,992	9,475

The following table shows the population, number of births and deaths, and the rates per 1,000 in each district of the City for the year 1922 :—

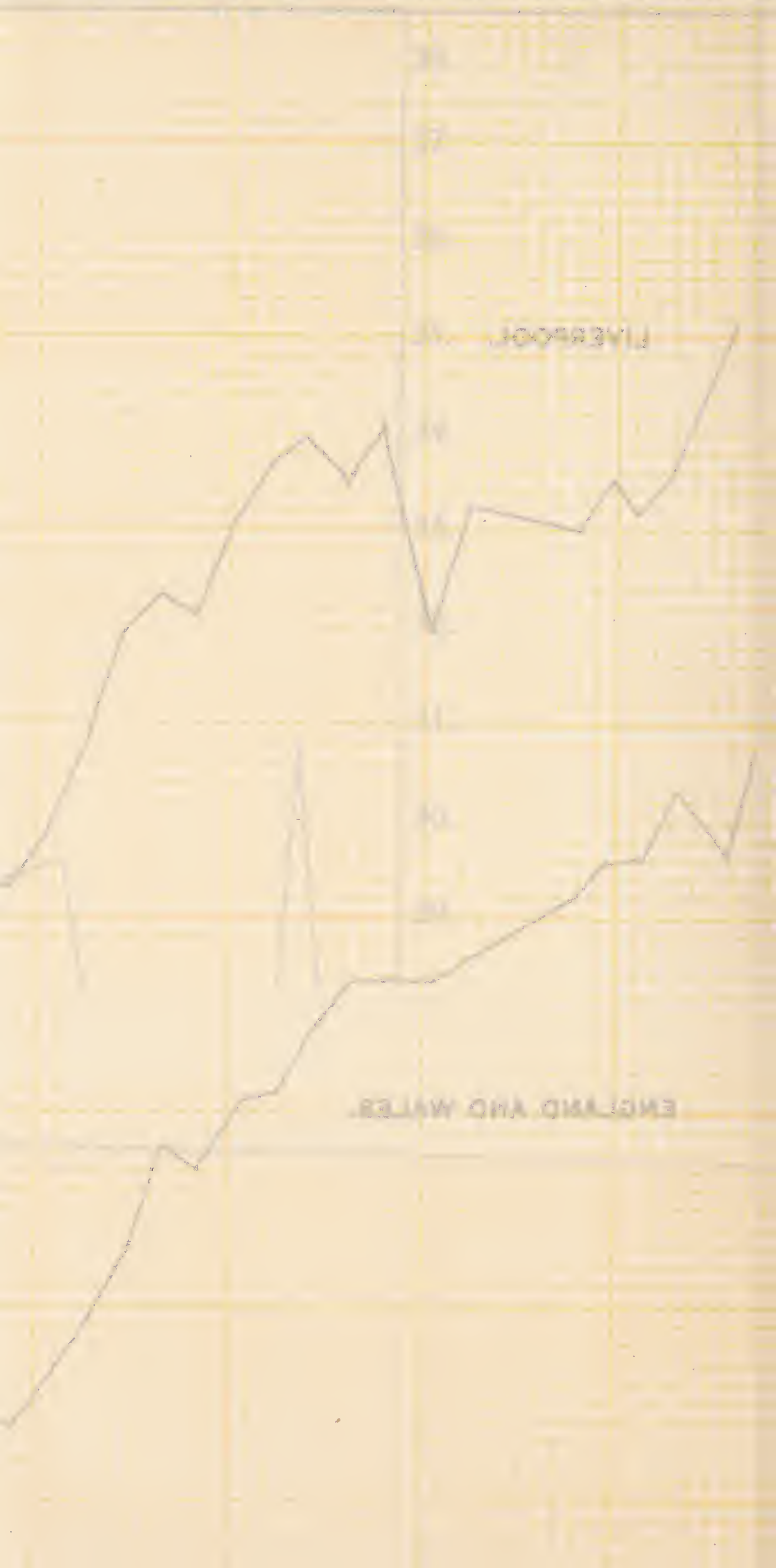
Districts.	Estimated Population 1922.	BIRTHS.		DEATHS.	
		Number of Births.	Rate per 1,000.	Number of Deaths.	Rate per 1,000.
SCOTLAND	46,258	1,721	37·2	920	19·9
EXCHANGE	35,716	1,203	33·7	822	23·0
ABERCROMBY	46,368	1,142	24·6	806	17·4
EVERTON	127,691	3,757	29·4	1,947	15·2
KIRKDALE	71,561	2,001	27·9	1,120	15·5
WEST DERBY (WEST) ...	93,841	2,459	26·2	1,345	14·3
TOXTETH	111,104	3,104	27·9	1,620	14·6
WALTON	85,362	1,688	19·8	975	11·4
WEST DERBY (EAST) ...	79,276	1,927	24·3	993	12·5
WAVERTREE	45,659	931	20·4	509	11·2
TOXTETH (EAST)...	34,972	558	15·9	429	12·3
GARSTON	29,449	708	24·0	357	12·1
FAZAKERLEY	6,205	116	18·7	63	10·2
WOOLTON	9,633	152	15·8	94	9·8
	823,095	21,467	26·1	11,992	14·6

BIRTH RATE, 1893-1922.

1893 4. 5. 6. 7. 8. 9. 1900. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 1. 2. 3. 4. 5. 6. 7. 8. 9. 20. 1. 2.



10 9 8 7 6 5 4 3 2 1 0



CITY OF LIVERPOOL.

2

Comparative view of the Birth and Death Rates per 1,000 in the different districts of the City during the year 1922.

Birth Rates per 1,000 of population.

Death Rates per 1,000 of population.

Scotland 37.2

Exchange 33.7

Everton 29.4

Kirkdale 27.9

Toxteth 27.9

West Derby W. 26.2

Abercromby 24.6

West Derby E. 24.3

Garston 24.0

Wavertree 20.4

Walton 19.8

Fazakerley 18.7

Toxteth E. 15.9

Woolton 15.8

Whole City

Whole City

Exchange 23.0

Scotland 19.9

Abercromby 17.4

Kirkdale 15.5

Everton 15.2

Toxteth 14.6

West Derby W. 14.3

West Derby E. 12.5

Toxteth E. 12.3

Garston 12.1

Walton 11.4

Wavertree 11.2

Fazakerley 10.2

Woolton 9.8

Deaths in Public Institutions are transferred to the Districts from whence the Patients came.

CITY OF LIVERPOOL

2

Quantity shown in the Bar and Graph below for 1960 is the difference between the 1960 and 1955 figures.

Bar Chart

Bar Chart

1960 - 1955

1960 - 1955



Quantity of 1960 figures are compared to the 1955 figures shown in the Bar Chart.

The following table shows the population, number of births, and the corrected birth-rate per 1,000 during the last twenty years:—

Year.	Population.	No. of Births.	Rate per 1,000.
1903	713,628	23,910	33·5
1904	717,647	24,278	33·8
¹ 1905	724,583	24,350	33·6
1906	728,155	24,123	33·1
1907	731,798	23,654	32·3
1908	735,423	23,891	32·5
1909	739,073	23,591	31·9
1910	742,742	23,054	31·0
1911	748,157	22,493	30·0
1912	754,942	22,233	29·4
² 1913	761,787	22,555	29·6
1914	775,578	23,065	29·7
1915	781,358	21,586	27·6
1916	787,188	20,679	26·3
1917	793,061	17,906	22·6
1918	798,979	17,133	21·4
1919	804,948	18,694	23·2
1920	810,947	25,039	30·9
1921	817,000	21,904	26·8
1922	823,095	21,467	26·1

The foregoing table shows the decrease in the birth-rate during the last 20 years.

The rates have been calculated upon the corrected population as ascertained by the Census Returns of 1901, 1911 and 1921.

¹ Fazakerley included with a population of 2,892.

² Woolton, Allerton and Childwall included with a population of 6,882.

DEATHS.

The following table shows the population, number of deaths, and the corrected death-rate per 1,000 during the last twenty years:—

Year.	Population.	No. of Deaths.	Rate per 1,000.
1903	713,628	14,240	19·9
1904	717,647	15,851	22·1
¹ 1905	724,583	14,103	19·5
1906	728,155	15,001	20·6
1907	731,798	13,676	18·7
1908	735,423	13,930	18·9
1909	739,073	13,945	18·8
1910	742,742	13,343	17·9
1911	748,157	14,607	19·5
1912	754,942	13,364	17·7
² 1913	761,787	13,658	17·9
1914	775,578	15,046	19·4
1915	781,358	14,478	18·5
1916	787,188	13,943	17·7
1917	793,061	13,093	16·5
1918	798,979	15,267	19·1
1919	804,948	13,283	16·5
1920	810,947	12,852	15·8
1921	817,000	11,666	14·3
1922	823,095	11,992	14·6

¹ Fazakerley included.

² Woolton, Allerton and Childwall included.

NOTE.—The rates have been calculated upon the corrected population as ascertained by the Census Returns of 1901, 1911 and 1921.

CITY OF LIVERPOOL.

DEATH RATE, 1891-1922.

3

AVERAGE DEATH-RATE 23.9 PER 1000.

AVERAGE DEATH-RATE 20.0 PER 1000.

AVERAGE DEATH-RATE 18.1 PER 1000.



STATION OF PLANTATION

DATE: _____ TIME: _____



ANALYSIS OF DECLINE IN MORTALITY.

The accompanying tables (pages 8 and 9) show the deaths that have occurred in the City of Liverpool during the past 52 years. These have been separated into five principal classes of disease that are likely to be affected by the activities of the Health and other Municipal Departments, namely, "Infective" Diseases, Tubercular Diseases, Respiratory Diseases (including Influenza), and Digestive Diseases (including Diarrhœa and Enteritis). These classes include practically all diseases of infective origin. The deaths from Cancer are placed in a separate column.

Despite the very great increase in population since 1871, the present population having nearly doubled since then, the actual numbers of deaths per annum has fallen from an average of 14,700 in the decennium 1871-1880 to 11,992 in the year 1922. The death-rate has fallen from 28·5 to 14·6 per thousand, a fall of nearly 50 per cent.

The greatest proportional decline has been experienced in the group of Infectious Diseases, which includes all the infectious diseases with the exception of Influenza; the decline has been steady and uniform, and the deaths now registered in this group exhibit a decline of no less than 83 per cent. during the 52 years.

A similarly steady decline has been shown by the Tubercular Diseases, which have fallen to 44·4 per cent. of the earlier figure.

In the group of Respiratory Diseases, although a decline has occurred, it has not been continuous, rises occurring in 1881-90 and in 1911-20, due in both cases to the prevalence of influenza. Although an actual decline in respiratory deaths has occurred this decline is not commensurate with that recorded in deaths from all causes, and the proportion of respiratory to total deaths rose from 20·2 to 29·1 per cent. during the period under review.

Digestive Diseases, of which the Diarrhœa and other Digestive Diseases of infants form by far the most important section, showed at first a slight decline from 1871 to 1890; in 1891-1900 there was a rise to 107 per cent. of the rate experienced in 1871-80. From that time on there has been a most marked and rapid decline from 107 to 56 per cent. of the 1871-80 mortality, and to 44·8 per cent. in 1922. This decline coincides in time with the great efforts that have been put forward in this City for the prevention of infantile mortality.

In marked contrast with the decline in these preventable diseases is the rise in Cancer mortality. As little is known of its causation it is not amenable to preventive measures.

CITY OF LIVERPOOL.

DEATHS FROM CERTAIN GROUPS OF DISEASES IN EACH DECADE FROM 1871 to 1920 and DURING 1921 and 1922.

Years.	(a) Infective diseases (less Diarrhoea and Influenza).	(b) Tubercular diseases.	(c) Respiratory diseases (including Influenza).	(d) Digestive diseases (including Diarrhoea).	Total Deaths from Classes (a),(b), (c) & (d)	(e) Cancer.	Total Deaths from all causes.
1871-1880	27,205	19,869	29,763	14,747	91,584	2,015	147,005
1881-1890	19,748	17,870	32,507	13,186	86,311	2,820	146,195
1891-1900	13,515	16,714	35,819	18,491	84,539	4,223	145,522
1901-1910	13,967	16,054	32,995	18,163	81,179	6,480	150,962
1911-1920	10,417	14,946	36,480	12,282	74,125	7,603	137,223
1921	882	1,342	2,683	1,803	6,810	890	11,666
1922	709	1,326	3,501	943	6,479	848	11,992

∞

DEATHS EXPRESSED AS A PERCENTAGE OF TOTAL DEATHS FROM ALL CAUSES (Proportionate Mortality).

1871-1880	19.2	13.5	20.2	10.0	62.3	1.4	100.0
1881-1890	14.1	12.7	23.2	9.4	59.4	2.0	100.0
1891-1900	9.3	10.8	24.6	12.7	57.4	2.9	100.0
1901-1910	8.6	10.6	21.8	12.0	53.0	4.3	100.0
1911-1920	7.9	10.9	27.3	8.9	55.0	5.5	100.0
1921	7.6	11.5	22.1	15.5	58.5	7.6	100.0

DEATH RATES PER 1000 POPULATION.

Years.	(a) Infective diseases (less Diarrhoea and Influenza).	(b) Tubercular diseases	(c) Respiratory diseases (including Influenza).	(d) Digestive diseases (including Diarrhoea).	Total Deaths from Classes (a), (b), (c) & (d)	(e) Cancer.	Total Deaths from all causes.
1871-1880	5.2	3.6	5.7	2.8	17.4	0.4	28.5
1881-1890	3.6	3.2	5.9	2.4	15.6	0.5	26.1
1891-1900	2.2	2.7	5.9	3.0	13.8	0.7	23.9
1901-1910	1.9	2.2	4.5	2.5	11.1	0.9	20.0
1911-1920	1.35	1.90	4.73	1.59	9.8	1.0	18.1
1921	1.08	1.64	3.29	2.21	8.3	1.09	14.3
1922	0.86	1.60	4.25	1.14	7.8	1.03	14.6

DEATH-RATES EXPRESSED AS A PERCENTAGE OF THE RATES EXPERIENCED IN 1871-1880 (Index Numbers).

1871-1880	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1881-1890	69.0	88.0	104.0	85.7	89.1	125.0	91.0
1891-1900	42.0	75.0	104.0	107.2	79.3	175.0	84.0
1901-1910	36.0	61.0	79.0	89.3	64.3	225.0	70.0
1911-1920	26.0	50.0	83.0	56.7	56.0	250.0	67.0
1921	20.8	45.5	57.7	79.0	47.7	272.5	50.2
1922	16.5	44.4	74.5	40.7	44.8	257.5	51.2

THE FOLLOWING TABLE SHOWS THE ANNUAL RATE OF MORTALITY PER 1,000 AS WELL AS THE TOTAL NUMBER OF DEATHS AT EACH OF TWELVE AGE-PERIODS DURING THE YEAR 1922 IN LIVERPOOL.

1922.	* Under 1 year.	1 to 2	2 to 5	5 to 10	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 and up- wards.	Total at all Ages.
Rate of Mortality per 1,000 living at ages indicated.	96.0	35.6	11.6	2.7	2.6	4.5	6.5	10.5	20.6	45.5	104.1	205.4	14.6
Total Number of Deaths at each Age-Period.	2052	755	500	230	429	604	772	1108	1442	1802	1664	634	11992
Approximate Population	20171	21191	42910	85946	165133	134052	119690	105228	70077	39632	15978	3087	823095

Column I. indicates the rate of mortality under one year per 1,000 births during the year.

The total death-rate of the City during the year was 14·6 per 1,000 of the estimated population, the average rate of the preceding five years (1917-1921) being 16·4. Full statistical details in regard to the various causes of death are set out in the tables to be found in the Appendix.

The deaths in public institutions numbered 5,588, and included 744 persons who were non-residents in the City area, indicative of the large proportion of the people who in times of sickness have recourse to public and charitable institutions. The number of deaths in the various institutions are shown in the following table:—

					Total Deaths.	Deaths of non-residents.
Parish Institution (Brownlow Hill)	...	...	...	...	964	15
Royal Infirmary	...	...	...	...	308	92
Royal Liverpool Children's Hospital	...	...	...	...	171	35
Maternity Hospital	...	...	...	...	59	18
Consumption Hospital	...	...	...	...	25	17
Hahnemann Hospital	...	...	...	...	10	—
Samaritan Hospital	...	...	...	...	3	—
Eye and Ear Infirmary	...	...	...	...	8	4
David Lewis Northern Hospital	...	...	...	...	240	64
Stanley Hospital	...	...	...	...	138	30
Royal Southern Hospital	...	...	...	...	136	19
Mill Road Infirmary	...	...	...	...	879	44
Hospital for Women	...	...	...	...	13	9
City Hospital North	...	...	...	...	18	—
Do. South	...	...	...	...	28	1
Do. East, Mill Lane	...	...	...	...	79	—
Do. Fazakerley	...	...	...	...	92	3
Do. do. Annexe	...	...	...	...	3	—
Do. Sparrow Hall	...	...	...	...	2	1
Do. Garston	...	...	...	...	20	1
Carried forward					3,196	353

					Total Deaths.	Deaths of non-residents
	Brought forward	...			3,196	353
Sanatorium Fazakerley	...	..	...	...	65	1
Do. Parkhill	...	...	...	...	51	—
Do. Highfield	...	...	...	...	181	—
Kirkdale Homes	...	...	...	...	1	—
Walton Institution (Rice Lane)	...	...	...	...	910	222
Belmont Road Institution	...	...	...	...	106	49
Cottage Homes, Wavertree	...	...	...	...	11	—
St. Joseph's Home	...	...	...	...	46	11
Toxteth Institution (Smithdown Road)	...	...	...	...	534	5
Home for Incurables	...	...	...	...	11	3
House of Providence	...	...	...	...	10	7
Tuebrook Villa Asylum	...	...	...	...	3	—
Turner Memorial Home	...	...	...	...	5	1
St. Augustine's Home	...	...	...	...	21	8
Alder Hey Hospital	...	...	...	...	374	57
H.M. Prison, Walton	...	...	...	...	3	2
Other Institutions	...	...	...	...	60	25
					—	—
					5,588	744
					<u> </u>	<u> </u>

INFECTIOUS SICKNESS.

Liverpool is closely associated with all parts of the world by reason of the large volume of shipping continually arriving in the port, and in consequence the City is peculiarly liable to the importation of various forms of infectious disease. The measures which have been adopted have been successful in preventing any outbreaks of a serious nature obtaining a footing in the City.

The following table shows the number of cases of Infectious Disease notified during 1922, the number of deaths registered from these diseases, the death rates per 100,000 of the population, and the percentage proportion of deaths to cases.

	Smallpox.	Enteric Fever.	Scarlet Fever.	Measles.	Diphtheria.	Puerperal Fever.	Erysipelas.	Cerebro-spinal Fever.	Poliomyelitis	Encephalitis Lethargica.	Malaria	Whooping Cough.
.....	2	31	2,419	3,570	953	60	522	18	10	5	43	2,025
.....	—	6†	39	171	91	33	26	14	4‡	3§	6	182
per 100,000	—	0.7	4.7	20.8	11.1	154*	3.2	1.7	0.5	0.4	1.0	22.1
of Deaths	—	19.4	1.6	4.8	9.5	55.0	5.0	77.7	40.0	60.0	13.9	9.0

Death rate per 100,000 Births.

Two occurred in cases of long standing.

† Four of these were brought in on shipboard.

§ One death was in a case reported in 1920.

SMALL-POX DURING THE LAST FIFTY-TWO YEARS.

Years of Increase.	No. of Cases.	Deaths.	Years of Subsidence.	No. of Cases.	Deaths.
1871	Unrecorded	1,919			
1872	„	50			
			1873	Unrecorded	10
			1874	„	30
			1875	„	29
1876	„	386			
1877	1,660	299			
			1878	35	3
			1879	12	—
			1880	14	2
1881	262	34			
			1882	67	6
			1883	126	26
1884	832	106			
1885	375	46			
1886	234	29			
			1887	23	1
			1888	27	1
			1889	9	1
			1890	2	—
			1891	21	2
			1892	177	13
			1893	75	9
1894	229	20			
			1895	130	12
			1896	8	—
			1897	6	—
			1898	17	2
			1899	10	1
			1900	156	23
			1901	37	6
1902	560	20			
1903	1,720	141			
			1904	27	2
			1905	15	—
			1906	19	1
			1907	19	—
			1908	7	—
			1909	9	—
			1910	10	—
			1911	19	—
			1912	4	1
			1913	13	1
			1914	2	—
			1915	—	—
			1916	7	—
			1917	3	1
			1918	2	—
			1919	20	1
			1920	10	2
			1921	—	—
			1922	4	—

The above table includes cases arriving on vessels or importations through other channels.

PLAGUE.

No case of plague occurred in the City during the year.

SMALLPOX.

Two cases of Smallpox occurred in the City of Liverpool during the year 1922. In one case the infection was clearly imported. The second case occurred during August in a woman who worked at one of the railway termini, and who had thus opportunities of coming in contact with the large numbers of persons passing through the City during the holiday season. A considerable number of persons in contact with the above cases were vaccinated and no spread of the disease occurred.

TYPHUS FEVER.

No case occurred in Liverpool during 1922. No indigenous cases have occurred during the course of the past four years.

ENTERIC FEVER.

The decline in the prevalence of this disease which has been continuous for the past 25 years has now almost led to its extinction. The death-rate has fallen since 1894 from 46 to 0·7 per 100,000; of the six deaths which occurred in the year, four occurred in seamen infected abroad; only two of the six deaths were of persons infected in Liverpool, or a mortality of 0·2 per 100,000, and of these one ascribed to Enteric was probably a case of Influenza and not Enteric.

Only 40 cases of Enteric Fever (including three cases of Paratyphoid B.) were reported during 1922 in the City and Port of Liverpool, this being the lowest figure as yet recorded. Of these, 12 cases were imported from overseas and one was a resident of Dublin on a visit to Liverpool, leaving 27 cases of indigenous origin. In the case of three of the latter the development of illness followed the consumption of shellfish, mussels, cockles and oysters, respectively, two of these cases being due to infection with the B Paratyphosus B.

Five nurses who had been nursing cases which eventually proved to be Enteric Fever were infected in this way. All the remaining cases were isolated and sporadic in nature.

The results of inquiry into the probable causation of the reported cases is shown in the following table, the average figures for the aggregate of the years 1911-14 and for the separate years 1919 to 1921 being shown for the purpose of comparison:—

CITY AND PORT OF LIVERPOOL. ENTERIC FEVER, 1911-14 and 1919-22

	CASES.					PERCENTAGE.			
	Average 1911-14.	1919.	1920.	1921.	1922.	Average 1911-14.	1919.	1920.	1921.
Imported by sea ...	41.75	27	21	16	12	26.2	42.2	36.3	37.2
Imported by land ...	11.0	6	3	1	1	6.9	9.5	5.2	2.3
Shell-fish ...	11.25	2	4	3	3	7.0	3.1	6.9	7.0
Direct infection ...	13.75	5	2	4	10	8.7	7.8	3.5	9.3
Direct infection from missed cases ...	2.5	1	6	1	2	1.6	1.6	10.4	2.3
Chronic carrier ...	0.25	—	1	—	—	0.2	—	1.5	—
Probably not Typhoid	10	2	—	2	3	6.3	3.1	—	4.7
Milk ...	0.75	—	—	—	—	0.5	—	—	—
Total in which source was ascertained ...	91	43	37	27	31	57.2	67.2	63.8	62.8
Central area ...	34	12	4	11	5	21.4	18.8	6.9	25.6
Outer area ...	34	9	17	5	4	21.4	14.0	29.3	11.7
Total in which sources were not ascertained	68	21	21	16	9	42.7	32.8	36.2	37.3
Total for City and Port	159	64	58	43	40				

DIPHTHERIA.

During 1922, 953 cases of Diphtheria were reported giving an attack rate of 1.2 per 1,000 of the population. Of these cases 91 proved fatal equal to a fatality rate of 9.5 per 100 cases, and a mortality rate of 11 per 100,000 population.

Table 1.

DIPHTHERIA IN THE CITY OF LIVERPOOL, 1913-1922.

	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.
Cases ..	1,085	1,377	1,247	1,114	1,022	1,302	1,959	1,654	1,182
Deaths ...	76	110	136	137	143	228	212	188	97
Case rate per 1,000 population ...	1.4	1.8	1.6	1.4	1.3	1.6	2.5	2.1	1.4
Death rate per 100,000 population	10.0	14.3	17.6	17.6	18.3	29.2	27.1	24.0	11.8
Fatality rate per 100 cases ...	7.2	7.8	11.0	12.2	13.9	17.5	10.8	11.4	8.2

DEATH RATE PER 100,000 POPULATION, NOTIFIED CASES PER 1,000 POPULATION, FATALITY RATE PER 100 CASES NOTIFIED AND PROPORTION OF CASES UNDER 5 YEARS OF AGE TO TOTAL CASES.





Table No. 2.
DEATHS FROM DIPHTHERIA.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland .....	...	...	2	...	...	...	1	...	3	...	3
Exchange	1	1	2	...	...	...	3	...	6	1	7
Abercromby .....	...	2	...	...	...	...	...	2	...	4	4
Everton	2	2	1	1	1	1	2	3	6	7	13
Kirkdale	1	...	1	...	...	1	1	...	3	1	4
West Derby (West) .....	...	3	2	1	...	4	1	...	3	8	11
Toxteth	3	5	2	...	1	...	3	2	9	7	16
Walton	3	1	...	...	1	...	4	1	8	2	10
West Derby (East) .....	...	1	3	1	2	...	2	1	7	3	10
Wavertree .....	...	4	1	...	...	1	...	1	1	6	7
Toxteth (East) .....	...	...	...	...	...	...	...	...	...	...	...
Garston	1	2	2	...	...	...	...	...	3	2	5
Fazakerley,.....	...	1	...	...	...	...	...	...	...	1	1
Woolton.....	...	...	...	...	...	...	...	...	...	...	...
City	11	22	16	3	5	7	17	10	49	42	91

AGES AT DEATH.

Under 1 year.	1 —	2 —	3 —	4 —	5 —	10 —	15 —	20 —	30	40 —	50 —	60 —	All Ages.
7	22	15	11	5	24	2	2	1	1	1	91

AGES OF NOTIFIED CASES.

23	75	76	60	65	297	122	78	73	42			911
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PERCENTAGE FATALITY AT EACH AGE.

30	29	19	18	7·7	8·1	1·6	2·6	1·4	4·7			9·9
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Deaths in Public Institutions are transferred to the Districts from whence the patients came.

Table No. 3.
DIPHTHERIA, YEAR 1922.

District.	Population, 1922.	Cases. *	Deaths.	Attack Rate per 1,000.	Death Rate per 100,000.	Case Fatality Rate %.	Percentage of Secondary to Primary Cases.	Proportion of Children 0-2 years to Total Cases.	Proportion of Children 0-5 years to Total Cases.
1. Scotland	46,258	35	3	0.8	6.5	8.6	8.3	17	46
2. Exchange	35,716	35	7	1.0	19.6	20.0	16.1	17	34
3. Abercromby	46,368	48	4	1.0	8.7	8.3	4.3	16	25
4. Everton	127,691	102	13	0.8	10.2	12.7	5.5	17	44
5. Kirkdale	71,561	52	4	0.7	5.6	7.7	12.5	13	40
6. West Derby West	93,841	112	11	1.2	11.8	9.9	4.6	15	35
7. Toxteth	111,104	141	16	1.3	14.4	11.3	4.4	13	34
8. Walton.....	85,362	111	10	1.3	11.7	9.0	6.0	7	26
9. West Derby East	79,276	128	10	1.7	12.7	7.7	4.5	2	20
10. Wavertree	45,659	60	7	1.6	15.4	11.7	9.4	7	30
11. Toxteth E. (Sefton P.)	34,972	30	...	0.9	...	...	3.7	7	30
12. Garston	29,449	41	5	1.4	17.0	12.2	18.2	...	11
13. Fazakerley	6,205	4	1	0.6	16.2	25.0	...	...	...
14. Woolton	9,633	3	...	0.3	...	...	...	...	33
Institutions, &c. ....	...	9	...	...	...	...	18.2	...	27
Central Districts (1 to 3) ...	128,342	118	14	0.9	11.0	11.5	6.2	9.2	32
Middle Districts (4 to 8) ...	489,559	518	54	1.1	11.1	10.4	5.8	5.5	19
Outer Districts (9 to 14, ...	205,194	266	23	1.3	11.3	8.6	7.4	5.0	25
Whole City	823,095	911	91	1.1	11.6	9.9	6.0	5.7	32

SCARLET FEVER.

Scarlet Fever has shown a steady decline in mortality during the past 40 to 50 years. Whilst the number of cases has shown a distinct reduction, the fatality (or proportion of deaths to cases) has shown a very marked reduction and in 1922 was only 1·6 per cent., as against 19·2 in the year 1889. This decline in the severity of Scarlet Fever is well shown in the attached diagram.

The following table shows the incidence and mortality from Scarlet Fever during the past 12 years. It will be seen that the years showing an increased incidence also show an increased fatality.

Table I.

SCARLET FEVER IN THE CITY OF LIVERPOOL, 1911-1922.

	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
Cases ...	3,641	2,867	2,187	3,712	2,984	2,148	2,277	3,020	2,735	3,230	3,062	2,419
Deaths ...	131	87	58	122	68	59	69	125	74	70	45	39
Case-rate per 1,000 inhabitants	4·9	3·8	2·9	4·9	3·9	2·7	2·9	3·8	3·1	4·1	3·7	2·9
Death-rate per 100,000 inhabitants	17·4	11·5	7·7	15·9	8·8	7·6	8·8	16·0	9·3	8·9	5·5	4·7
Fatality rate per 100 cases ...	3·5	3·0	2·7	3·3	2·3	2·8	3·0	4·1	2·6	2·2	1·5	1·6

During 1922, 2,419 cases and 39 deaths were recorded giving an attack-rate of 2·9 per 1,000 and a mortality rate of 4·7 per 100,000.

In the second table these cases and deaths are distributed into the several wards, which have also been aggregated into three zones, a central, a middle and an outer, comprising districts 1 to 3, 4 to 8, and 9 to 14, respectively. The middle zone was again the most heavily attacked. Despite the variations in the age incidence of the cases the fatality rate was identical throughout the City.

Table No. II.
SCARLET FEVER, 1922.

District.	Population, 1922.	Cases. *	Deaths.	Attack Rate per 1,000.	Death Rate per 100,000.	Case Fatality Rate %.	Percentage.		
							Proportion of Secondary to Primary Cases.	Proportion of Children 0-2 years to Total Cases.	Proportion of Children 0-5 years to Total Cases.
1. Scotland	46,258	52	1	1.1	2.1	2.0	9.3	9.9	43
2. Exchange	35,716	75	2	2.1	5.6	2.7	13.5	9.3	29
3. Abercromby	46,368	56	1	1.2	2.2	2.0	11.1	10.7	32
4. Everton	127,691	354	5	2.8	3.9	1.4	11.1	6.8	31
5. Kirkdale	71,561	160	2	2.2	2.8	1.2	6.7	5.0	32
6. West Derby West	93,841	262	6	2.8	6.6	2.3	15.5	6.1	26
7. Toxteth	111,104	386	10	3.5	9.1	2.6	13.3	6.5	30
8. Walton.....	85,362	341	5	4.0	5.9	1.4	8.5	6.7	22
9. West Derby East	79,276	243	1	3.1	1.3	0.4	12.3	7.0	25
10. Wavertree	45,659	110	4	2.4	9.0	3.6	12.5	3.6	25
11. Toxteth E. (Sefton Park)	34,972	93	...	2.8	...	...	16.2	1.1	14
12. Garston	29,449	105	1	3.6	3.4	0.9	21.8	3.9	24
13. Fazakerley	6,205	15	1	2.4	16.1	6.7	10.0	6.6	33
14. Woolton	9,633	12	...	1.3	0.0	...	41.7	...	...
Institutions, &c.....	...	52	...	...	...	...	170	4.0	13.4
Central Districts (1 to 3) ...	128,342	183	4	1.5	3.1	2.1	11.5	9.2	31.5
Middle Districts (4 to 8).....	489,559	1,503	28	3.1	6.0	1.9	11.6	5.5	28.2
Outer Districts (9 to 14) ...	205,194	578	7	2.9	3.4	1.2	25.2	5.0	23.9
Whole City	823,095	2,316	39	2.9	4.7	1.6	15.0	5.7	27.1

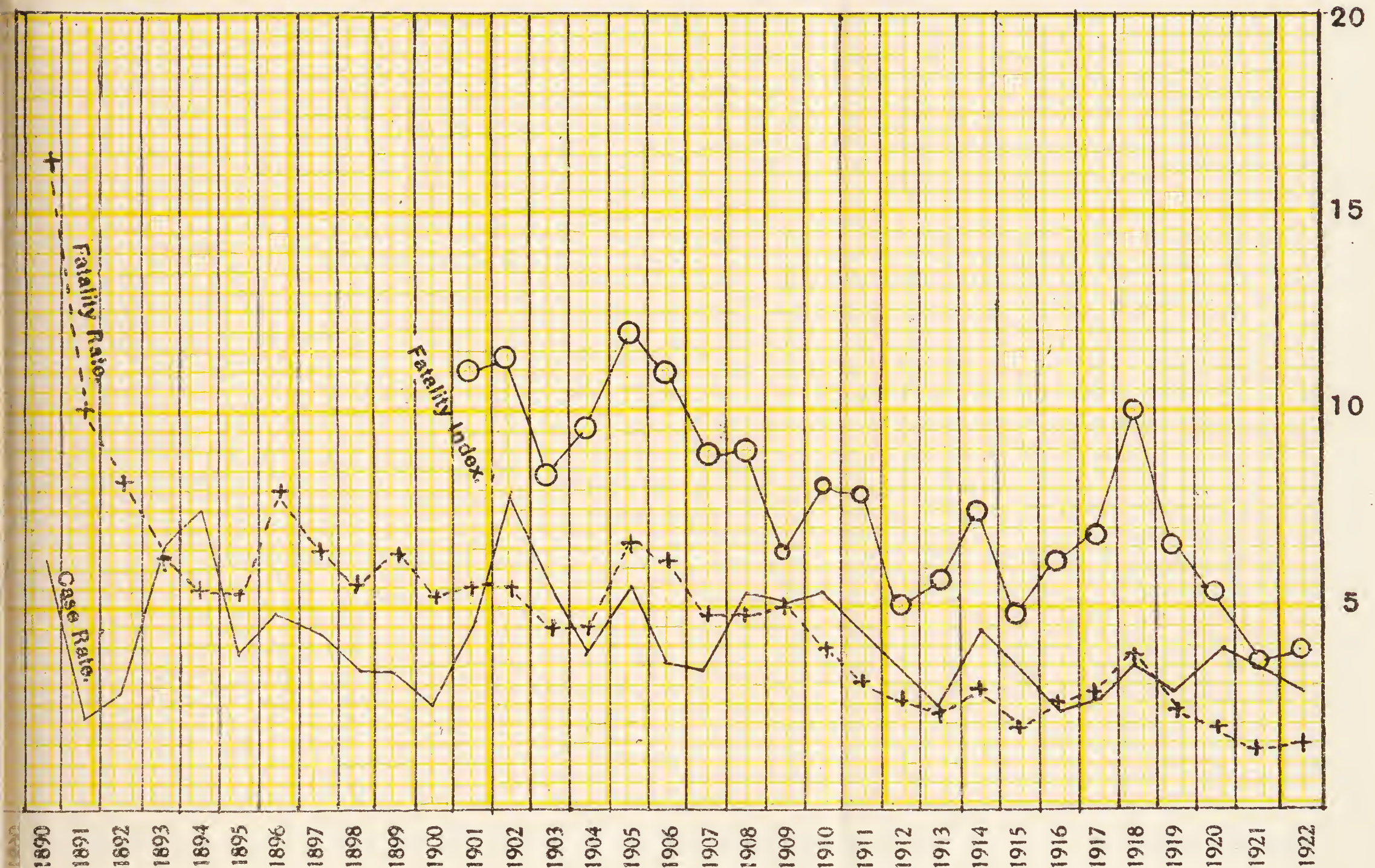
* Cases are those with onset in 1922.

CITY OF LIVERPOOL.

5

Scarlet Fever 1890-1922. Case Rate per 1000 Population,
Fatality Rate per 100 Cases & Fatality Index (corrected for age at attack of cases).

M.53554 Est.



CITY OF LIVERPOOL

Goat Head Fever 1890-1922. Case Rate per 100 Cases & Fatality Index (minors)

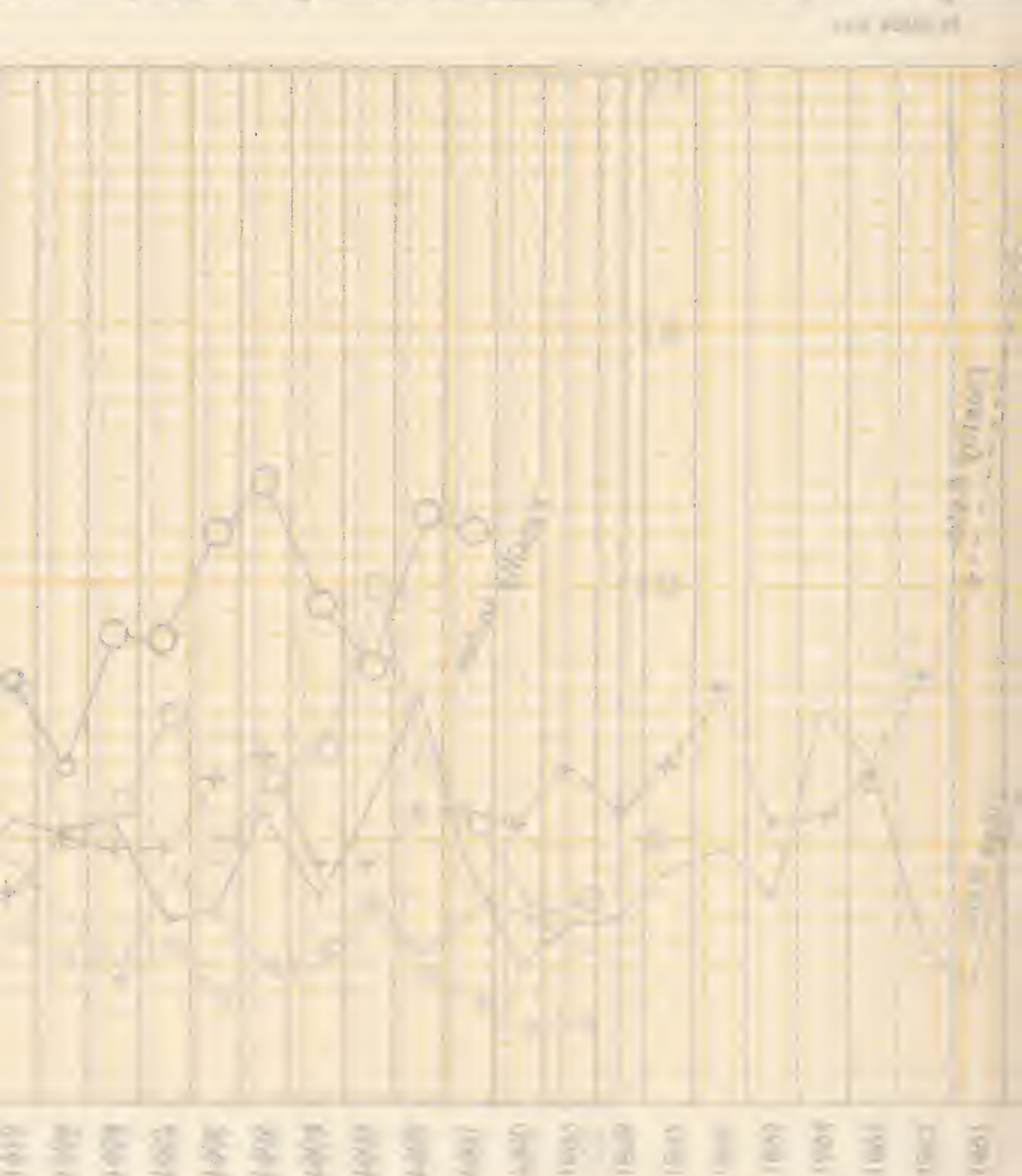


Table No. III.
DEATHS FROM SCARLET FEVER.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland .....	...	1	...	...	...	...	...	...	...	1	1
Exchange .....	...	...	...	1	...	...	1	...	1	1	2
Abercromby .....	...	...	1	...	...	...	...	...	1	...	1
Everton	1	1	...	...	2	1	...	...	3	2	5
Kirkdale	1	...	...	...	...	1	...	...	1	1	2
West Derby West	1	2	...	...	1	1	...	1	2	4	6
Toxteth	3	2	1	3	...	...	1	...	5	5	10
Walton	1	2	...	1	1	...	...	...	2	3	5
West Derby East .....	...	...	...	...	...	1	...	...	...	1	1
Wavertree .....	...	...	1	2	1	...	...	...	2	2	4
Toxteth East .....	...	...	...	...	...	...	...	...	...	...	...
Garston	1	...	...	...	...	...	...	...	1	...	1
Fazakerley	1	...	...	...	...	...	...	...	1	...	1
Woolton .....	...	...	...	...	...	...	...	...	...	...	...
City	9	8	3	7	5	4	2	1	19	20	39

AGES AT DEATH.

Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60 and up- wards.	All Ages.
1	7	8	4	3	11	2	1	1	1	...	...	...	39

AGES OF NOTIFIED CASES.

29	100	153	155	184	935	483	138	86	53			2316
621 = 26·8%					40·4%		20·9%		11·98%			

PERCENTAGE FATALITY AT EACH AGE.

3·5	7·0	5·2	2·6	1·6	1·2	0·4	0·7	1·2	0·0			1·6
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Deaths in Public Institutions are transferred to the Districts from whence the patients came.

Table III shows the deaths distributed according to age, sex and the quarter of the year. The last section shows the ages of notified cases and the fatality rate at the several age periods; from this it will be observed that while during the first and second years of life 3·5 and 7·0 per cent. of cases, respectively, proved fatal, the fatality steadily declined with increasing age; only five deaths occurred in persons over 10, and none in persons over 40 years of age.

No considerable outbreak occurred in any elementary school, and school closure was not necessitated in any case. Where a few cases have occurred in a school, visits have been paid and the "missed cases" of this disease have been searched for and occasionally found. That a certain proportion of the cases are infected in connection with attendance at school is indicated by the following figures, which show the percentages of persons below, at, and above school age in the periods preceding, including and succeeding the summer vacation. It will be observed that there is a decided reduction in the proportion of children of school age affected with scarlet fever during the school vacation. The cases are arranged according to the date of onset:—

	0—5 years.	5—15 years.	Over 15.
January 1st—June 30th	24·6	63·0	12·5
July 1st—August 15th	38·6	*47·6	13·7
August 16th—September 30th ...	31·4	58·6	10·1
October 1st—December 31st ...	19·6	69·8	10·5

RETURN CASES.—Cases occurring within the outside margin of one month of the discharge of a case from hospital to the same house, were regarded as "return cases." Of the 2,005 cases admitted to hospital suffering from Scarlet Fever, 65, or 3·2 per cent., were associated with recurrent infection in this way. In only seven houses did more than one "return case" arise. The proportion of "return cases" to cases discharged from hospital, which was 1·8 in 1920 and 2·2 in 1921, was 2·9 per cent. in 1922.

* The Schools were closed from July 8th to August 14th.

Table IV.
SCARLET FEVER, RETURN CASES.

	1922.		Average of past 3 years.	
	No. of cases associated with return cases.	Expressed as a percentage of cases discharged from hospital.	No. of cases associated with return cases.	Expressed as a percentage of cases discharged from hospital.
January	10	3·7	7·3	2·3
February	9	3·4	9·3	3·3
March	4	1·8	5·6	2·1
April	7	4·7	5·2	2·5
May	5	2·6	6·3	2·9
June	4	2·7	3·6	2·2
July	6	3·5	3·0	1·3
August	4	2·8	2·3	1·2
September	2	1·4	2·0	0·9
October	1	0·6	1·0	0·5
November	6	4·3	4·3	1·4
December	7	3·1	10·6	2·5
WHOLE YEAR ...	65	2·9	61·0	2·3

MEASLES.

The numbers of deaths from Measles has shown a tendency to decline of recent years. During 1922, there were 171 deaths, as against 405 deaths which was the average of the past ten years. The mortality rate was 20 per 100,000.

Measles became a notifiable disease in 1915 by Order of the Local Government Board; the disease is no longer generally notifiable, but in Liverpool is notifiable on a voluntary basis. During the year, 3,570 cases came under the notice of the Medical Officer of Health, the sources of information being as follows:—

- (a) Notified by Medical Practitioners, 2,182.
- (b) Information from Schools, etc., 1,362.
- (c) Discovered by Health Visitors, 26.

The proportion of deaths to cases, or fatality rate, was 4·8, which is rather higher than the average of the past seven years. The mortality in measles depends mainly upon the age at which infection occurs; as shown in Table III, the great majority of the deaths occur in children under three years of age. Any increase in the proportion of cases among children under this age will be attended by a corresponding rise in fatality.

The experience of the past ten years is shown in the following table :

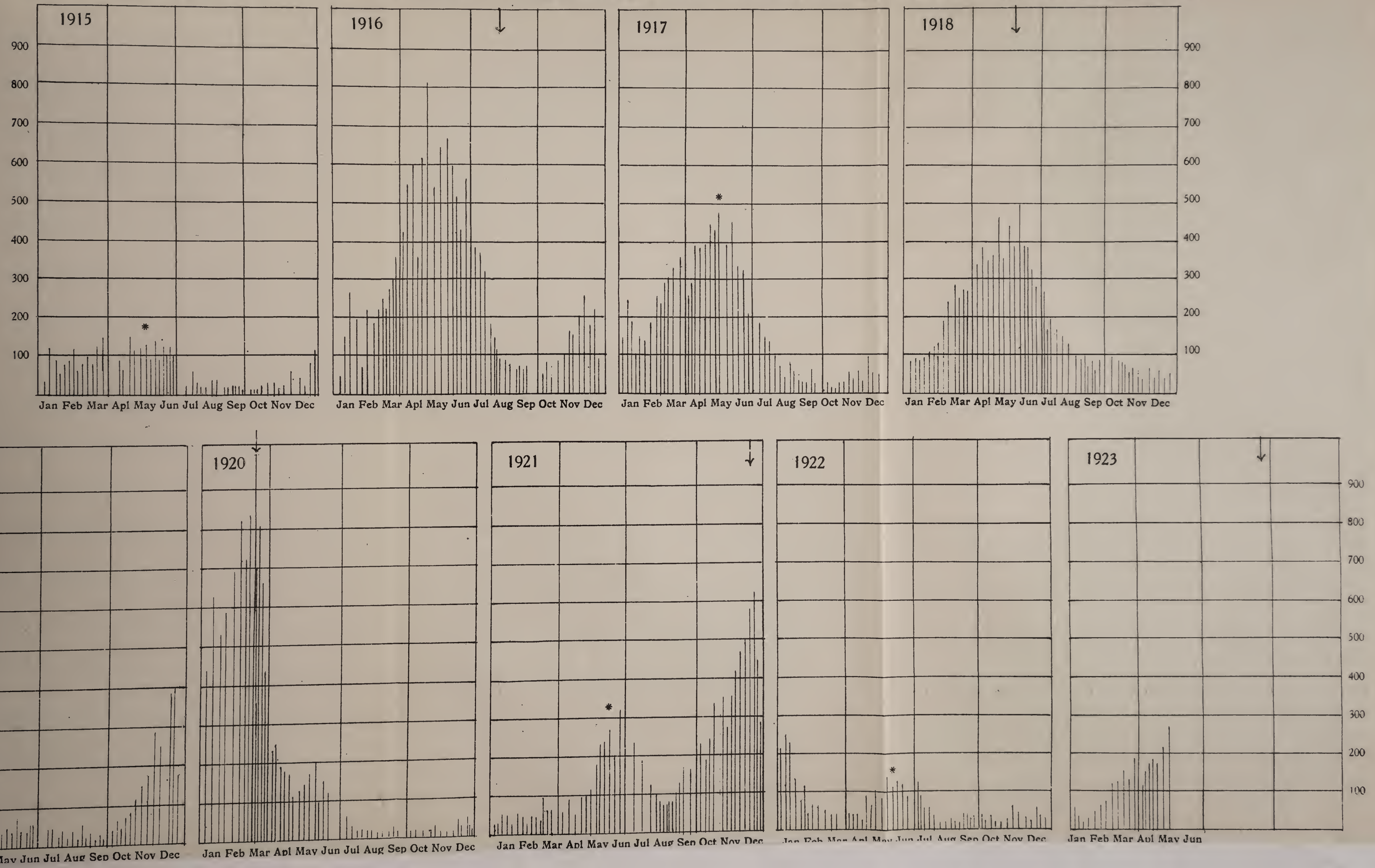
Table 1.

	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
Cases .....	...	...	3,049	14,732	9,230	9,268	3,983	11,448	9,143	3,570
Deaths	322	517	256	264	436	407	103	387	328	171
Case rate per 1,000 inhabitants ...	...	...	...	19·0	11·8	11·8	5·1	14·6	11·2	4·3
Death rate per 100,000 inhabitants ...	43	69	33	34	56	52	13	49	40	21
Fatality rate per 100 cases.....	...	...	...	1·1	4·7	4·3	2·6	3·4	3·6	4·8

The experience of many years has shown that Measles tends to occur in waves which follow each other at intervals of about 92 weeks. The diagram facing shows, week by week, the numbers of cases reported during the past nine years. Similar diagrams were published in the Annual reports of the Medical Officer for 1911 and 1921, and gave the deaths for the preceding decades. It will be seen that the periodic recurrences are very regular over considerable periods, but that when the epidemic is due to occur in one of the three Autumn months, August, September or October, it fails to materialise. The maximal points during the last outbreak, that of December, 1921, occurred 92 and 94 weeks for cases and deaths, respectively, after the corresponding points in 1920. This outbreak rapidly subsided during January, only one infants' department being closed on that account during the month; by the middle of February the numbers of cases had fallen to about 50 per week. The normal seasonal increase raised this

CITY OF LIVERPOOL.

Cases of Measles during the years 1915 to 1922. The arrows show recurring intervals of 92 weeks. The asterisks indicate the normal rise in the second quarter of the year.



number to 100 to 130 per week in May and June. Three small school outbreaks occurred in December in Garston, Sefton Park and Walton and necessitated the closure of the infants' departments shortly before Christmas.

The fourth table (page 28) shows the deaths from Measles in the several districts of the City during the past four years. It will be seen that, while epidemics affect the City as a whole every second year, the different districts of the City are affected unequally and at different periods. The main weight of the epidemic affects the more central portions of the City; the out-lying portions are often most affected in the inter-epidemic period. It is clear that the epidemic comes to an end before the susceptible population has been exhausted; children who have not caught the infection during the time when one outbreak is present will probably escape for a further period of 92 weeks and they will then have a much better chance of recovery as the fatality (see Table III) rapidly diminishes with increasing age.

Apart from the school closure, referred to above, other measures to limit the ravages of the disease include efforts to secure the isolation of the patients; in view of the heavy mortality among children under three years of age, parents are strongly urged to keep those of tender age apart from those already affected. Children coming from a house in which a case of measles has occurred are excluded from school for 16 days; children over 7 years of age who have already had measles are exempted.

The Order of the Ministry of Health authorises local authorities to provide medical assistance for the poorer inhabitants of their district, including nursing, and the Health Committee appointed four permanent nurses in 1916 to deal with such cases as were contemplated by the Order. This number has been increased in times of outbreak. In consequence of the visits of these nurses, many children have benefited from the assistance and advice given, in some instances children have been removed for hospital treatment who would otherwise have been left at home without adequate care and attention. The visits, etc., made by these nurses in the course of 1922 were as follows:—

New cases visited during year 1922	...	...	2,729
Cases nursed	„	„	649
Revisits to cases	„	„	5,503

As 98 per cent. of deaths from Measles are due to complications, mainly Pneumonia, there can be little doubt that the work of these nurses resulted in much saving of life.

Table II.
DEATHS FROM MEASLES.

DISTRICTS	QUARTERS.								YEAR		
	March		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland	2	4	...	1	...	...	...	...	2	5	7
Exchange	6	7	1	2	...	...	...	...	7	9	16
Abercromby	3	7	1	...	...	1	...	...	4	8	12
Everton	18	14	2	1	2	1	...	...	22	16	38
Kirkdale	5	8	...	1	...	...	...	...	5	9	14
West Derby (West)	11	8	1	1	...	...	1	...	13	9	22
Toxteth	11	9	2	7	4	5	1	1	18	22	40
Walton	3	2	...	...	...	...	1	...	4	2	6
West Derby (East)	3	4	...	2	...	...	...	...	3	6	9
Wavertree	2	...	...	...	...	...	...	...	2	...	2
Toxteth East	1	1	...	...	...	...	...	...	1	1	2
Garston .....	..	...	1	1	...	...	...	...	1	1	2
Fazakerley .....	...	1	...	...	...	...	...	...	...	1	1
Woolton .....	...	...	...	...	...	...	...	...	...	...	...
City	65	65	8	16	6	7	3	1	82	89	171

AGES AT DEATH.													
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60—	All Ages.
39	78	38	8	2	5	...	...	1	...	...	...	...	171

Deaths in Public Institutions are transferred to the Districts from whence the patients came,

Table III

MEASLES DURING THE YEAR 1922

Statement showing the total numbers of cases brought under the notice of the Medical Officer from schools, and those notified by Medical Practitioners:—

Age.	Cases occurring in Children of School Age.	Cases notified by Medical Practitioners.	Number of Deaths.	Fatality Rate per 1,000 cases.
0—1	...	242	39	161·1
1—2	...	376	78	208·0
2—3	...	319	38	119·1
3—4	...	239	8	33·5
4—5	...	218	2	9·1
5—6	667	449	}	5·4
6—7	446	253		
7—8	197	120		
8—9	71	65		
9—10	51	33	}	0·0
10—11	30	18		
11—12	22	11		
12—13	17	10		
13—14	43	7	}	
14—15	36	6		
15—16	...	}	1	25·6
16 upwards	...			
	1,580	2,405	171	71·1

Table IV.

Deaths from Measles for the years 1919 to 1922 after distribution of the Institutional Deaths according to the place of residence :—

District.	1919.	1920.	1921.	1922.
Scotland... ..	4	41	22	7
Exchange	13	36	26	16
Abercromby	8	14	15	12
Everton	34	77	99	38
Kirkdale... ..	6	43	31	14
West Derby West	15	37	25	22
Toxteth	3	51	58	40
Walton	9	19	15	6
West Derby East	4	21	18	9
Wavertree	6	18	7	2
Sefton Park	1	4	1	2
Garston ... ..	...	22	8	2
Fazakerley ... ..	...	2	...	1
Woolton ... ..	...	2	3	...
Total	103	387	328	171

WHOOPIING COUGH.

The number of cases coming to the notice of the Medical Officer during 1922 was 2,025, and the number of deaths 182, corresponding to a death-rate of 22·0 per 100,000 inhabitants, which is slightly below the average of the past ten years. The number of deaths in 1919 was 53, corresponding to a death-rate of 7 per 100,000, the lowest within the records of the City. The average death-rates from Whooping Cough during the past 70 years is as follows:—

1850-59	...	...	...	...	...	...	103·6
1860-69	...	...	...	...	...	...	107·3
1870-79	...	...	...	...	...	...	86·8
1880-89	...	...	...	...	...	...	72·9
1890-99	...	...	...	...	...	...	56·3
1900-09	...	...	...	...	...	...	45·0
1910-19	...	...	...	...	...	...	32·6
1920	...	...	...	...	...	...	29·2
1921	...	...	...	...	...	...	25·6
1922	...	...	...	...	...	...	22·0

This shows a very considerable decline in mortality. Whether this decline is due to lessened prevalence, to alterations in the age-incidence, or to lowered virulence cannot be ascertained from the figures. The following table shows for the previous ten years the numbers of cases coming to the notice of the Medical Officer, the numbers of deaths, the death-rate per 100,000 inhabitants, and the fatality rate per 100 cases:—

Years.	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
es	2486	1642	2303	2020	1524	3056	4244	788	2804	3019	2025
ths	272	232	248	259	235	132	364	53	226	210	182
th Rate per 00,000 of the opulation ...	36	31	32	33	30	17	46	7	29	26	22
ality Rate Percentage of eathstocases)	10·9	14·1	10·3	12·8	15·3	4·3	8·6	6·7	8·1	8·1	9·0

The most salient feature is the decline in the proportion of deaths to cases during the past four years. As the disease is not compulsorily notifiable, caution is necessary in drawing conclusions from these figures. The probability is that information in the later years has been more complete than formerly.

ENCEPHALITIS LETHARGICA.

This disease was first brought prominently into notice about the year 1916. It was made notifiable in 1919 when two cases were recorded in Liverpool; 17 cases were reported in 1920, 27 in 1921, of which latter 5 or 18·5 per cent. proved fatal, and 5 cases with 3 deaths in 1922.

These were distributed as follows :—

February—Scotland—1 case, aged 14 years, female.

March—Everton—1 case, aged 21 years, female.

August—West Derby East—1 case, aged 20 years, female.

October—Imported—1 case, aged 58 years, male.

November—Everton—1 case, aged 21 years, male.

The majority of cases were therefore among young adults.

These figures give no indication of the considerable outbreak occurring in the first quarter of 1923. Of the cases notified during 1923 one had its onset in July, one in August, and 8 in December, 1922.

Two cases were reported as suffering from Encephalitis Lethargica which upon further examination were found to be suffering from other conditions, namely, Malignant Endocarditis and Septic Encephalitis.

Two cases were brought into Liverpool after the onset of the disease from Croydon and Kingstown, near Dublin, respectively.

As in previous years it was found that in most cases the prospects of ultimate and complete recovery were unfavourable; many cases, that appeared to have recovered, gradually developing a progressive mental degeneration.

CEREBRO-SPINAL FEVER.

Eighteen cases of Cerebro-Spinal Fever occurred during 1922 of which 14 (or 77 per cent.) proved fatal, making a death-rate of 1·7 per 100,000 of the population. The cases during the years 1915 to 1921 were 30, 37, 34, 17, 26, 27 and 26, respectively.

The diagnosis was confirmed by the finding of the causal organism (the meningococcus) in the cerebro-spinal fluid after lumbar puncture in nine cases.

In four cases admitted as Cerebro-Spinal Meningitis the organisms found were not those of Cerebro-Spinal Fever, but of Tubercular Meningitis, and in two other cases of Pneumococcal Meningitis.

POLIOMYELITIS.

Eleven cases were notified, four of which, or 36 per cent., proved fatal.

ANTHRAX.

Four cases of Anthrax occurred amongst the population of the City during the year.

BACTERIOLOGICAL EXAMINATION OF SHAVING BRUSHES.

During the year 96 shaving brushes (36 imitation badger, 44 white bristle, and 16 coloured hair) were submitted to the City Bacteriologist for examination, and none of these brushes were found to be infected with Anthrax.

INFLUENZA AND OTHER RESPIRATORY DISEASES.

Respiratory diseases cause an increasing proportion of the total deaths from all causes. In the decennial period 1871-80 the proportion of deaths certified as due to Respiratory diseases was 20·2 per cent. of all deaths; in 1911-1920 it was 27·3 per cent. of all deaths; in 1921 it had again fallen to 22·1 per cent. of all deaths, but in 1922 it rose to 29·1 per cent. The table below shows for deaths due to Respiratory diseases the actual numbers, the percentage proportion to all deaths, the death-rates per 100,000 population, and the death-rates expressed as a percentage proportion of the rates experienced in 1871-80 (index figures) :—

DEATHS FROM RESPIRATORY DISEASES.

	Actual numbers of deaths.	Percentage proportion to all deaths.	Death-rate per 1,000 population.	Death-rates as a percentage proportion of rate experienced in 1871-80.
1871-80 ...	29,763	20·2	5·7	100
1881-90 ...	32,507	23·2	5·9	104
1891-1900	35,819	24·6	5·9	104
1901-10 ...	32,995	21·8	4·5	79
1911-20 ...	36,480	27·3	4·73	83
1921 ...	2,683	22·1	3·29	57·7
1922 ...	3,501	29·1	4·25	74·5

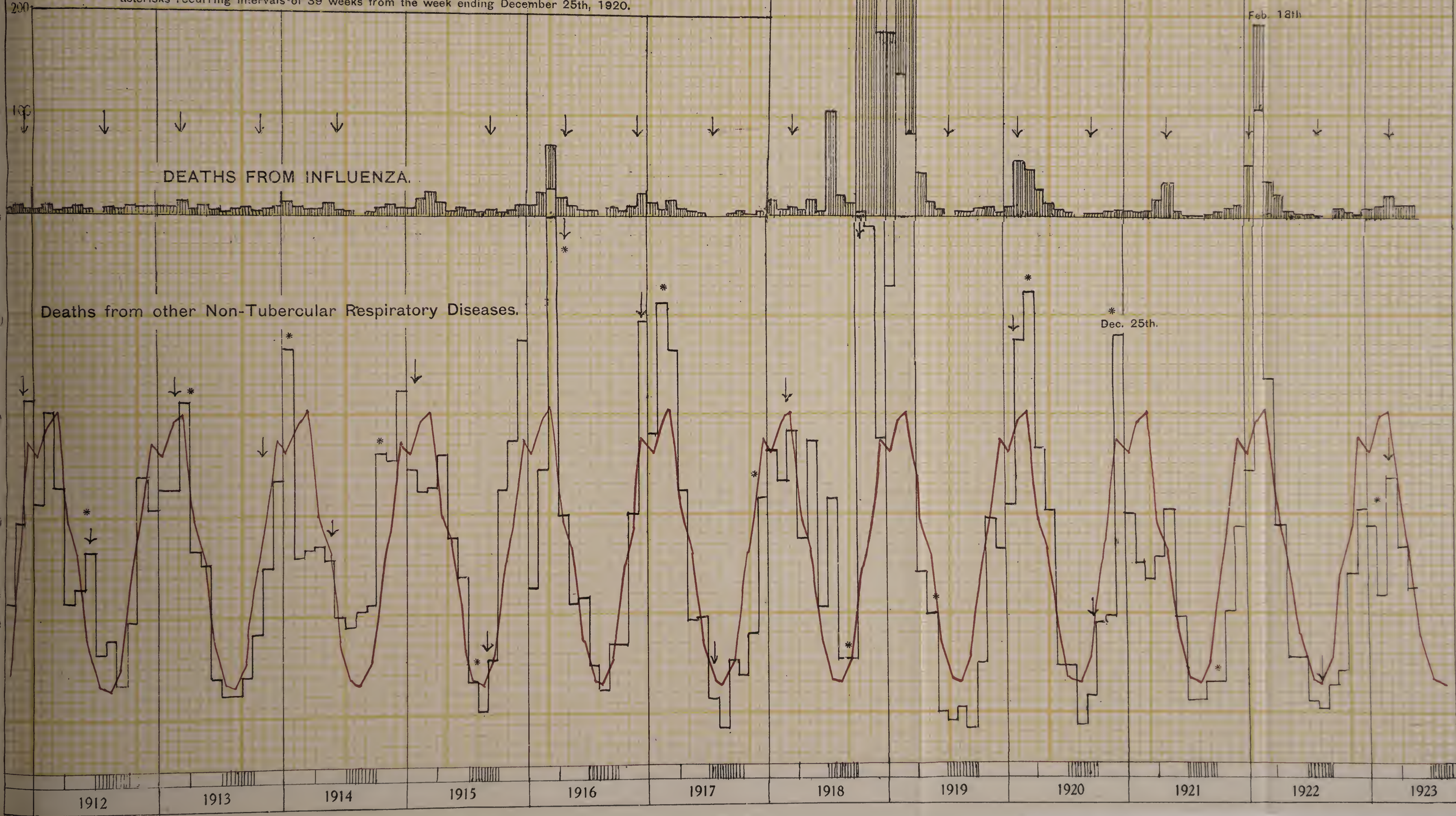
The rate per 1,000 population had therefore declined in 1921 to 57·7 per cent. of the 1871-80 rate. The decline, however, has not been steady; a rise occurred in 1881-90, and continued into the following decennium. A later rise occurred in 1911-20 owing to the virulent Influenza pandemic of 1918-19. It is somewhat remarkable that the respiratory death-rate was rising during 1881-90, although only nine deaths from Influenza were recorded in those ten years; in 1891, Liverpool was affected by the prevailing pandemic of Influenza, and 247 deaths were attributed to that cause.

During 1922 the most severe outbreak of Influenza since the 1918-19 epidemic affected Liverpool in common with a large part of the civilised world. The total number of deaths ascribed to Influenza during 1922 was 333; as has been pointed out in earlier reports this total represents but a proportion of the deaths resulting from the epidemic; many patients who succumb to an attack of Pneumonia or Bronchitis only consult their medical attendants when these conditions are fully developed, by which time the evidence as to the causation of these conditions by Influenza is slight. The number of deaths from respiratory diseases other than those stated to be the result of Influenza rose from 2,683 in 1921 to 3,501 in 1922, an increase of 818, and this excess can be reasonably supposed to be the result of influenza; the number of deaths from diseases of the circulatory system rose from 1,183 in 1921 to 1,530 in 1922, an increase of 347, and this increase can also, with considerable probability, be debited to influenza. The total number of deaths from this cause during the year may therefore be placed in the vicinity of 1,495.

Influenza was prevalent in London and other parts of the country during December, 1921, and January, 1922. Respiratory mortality was somewhat high during November and the beginning of December, 1921, in Liverpool, but it was not until the second week in January that definite evidence of the onset of an Influenzal wave was forthcoming. (See chart 7). On the 24th of January, the schools, especially in Everton, were beginning to be severely affected, and by the end of the month 18 infants' departments and three whole schools had to be closed. The maximum of the outbreak occurred in the week ending February 18th. Comparing this week with the first week in January it will be seen (see table, page 35) that the total deaths had been doubled, the deaths from respiratory diseases trebled and the deaths from circulatory diseases increased between two and three times. Thereafter the numbers as rapidly declined, although a small subsidiary wave

DEATHS FROM INFLUENZA AND FROM OTHER RESPIRATORY DISEASES IN THE CITY OF LIVERPOOL DURING THE YEARS 1912-1922.

The red line is the monthly average of the decade 1912-1921.
The arrows indicate recurring periods of 32 weeks from the week ending October 26th, 1918, and the asterisks recurring intervals of 39 weeks from the week ending December 25th, 1920.



STATE OF NEW YORK
IN SENATE
January 10, 1893.
REPORT
OF THE
COMMISSIONER OF THE LAND OFFICE.

ALBANY:
J. B. LIPPINCOTT & CO. PRINTERS.
1893.

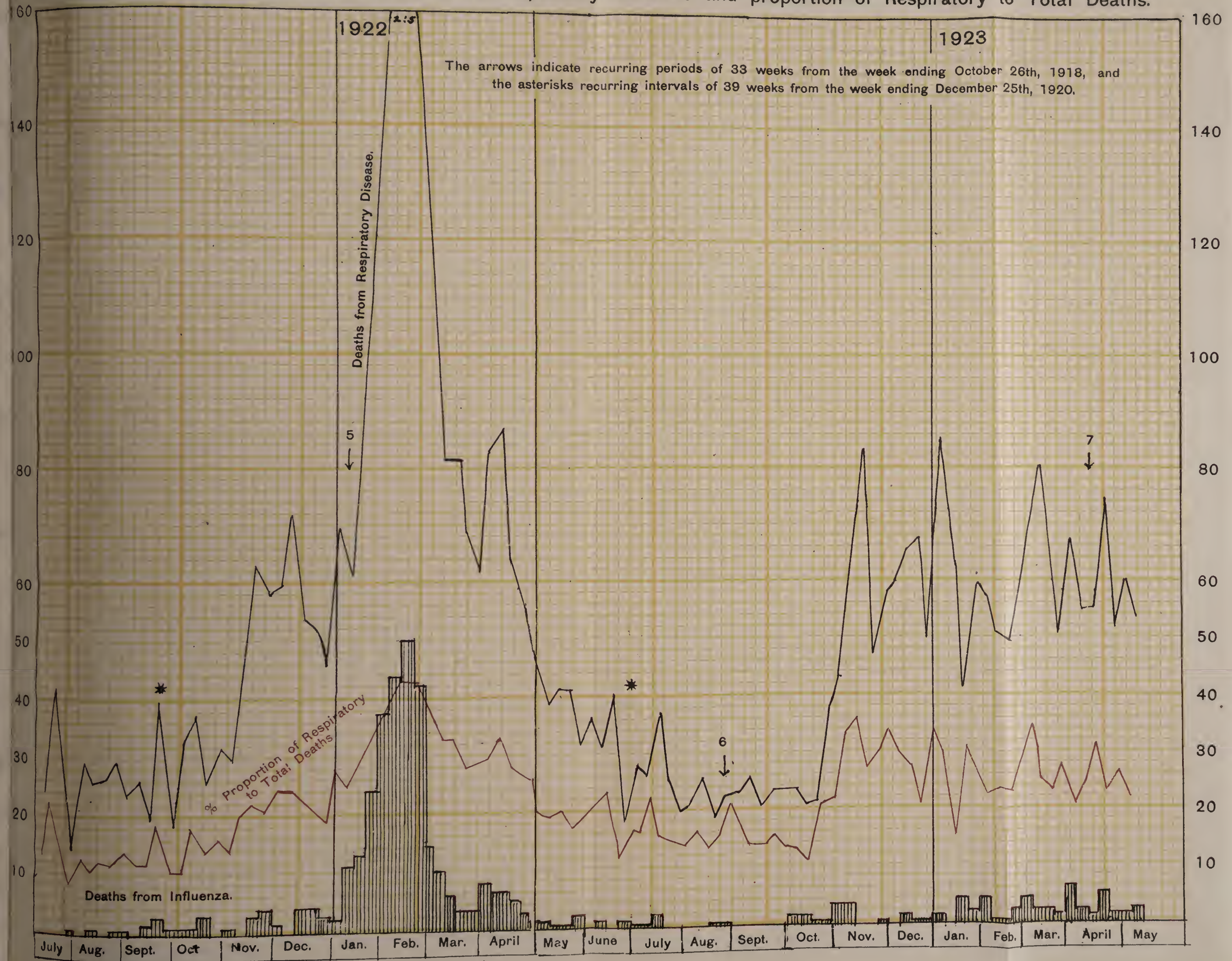
OFFICE OF THE COMMISSIONER OF THE LAND OFFICE,
ALBANY, N. Y.



CITY OF LIVERPOOL.

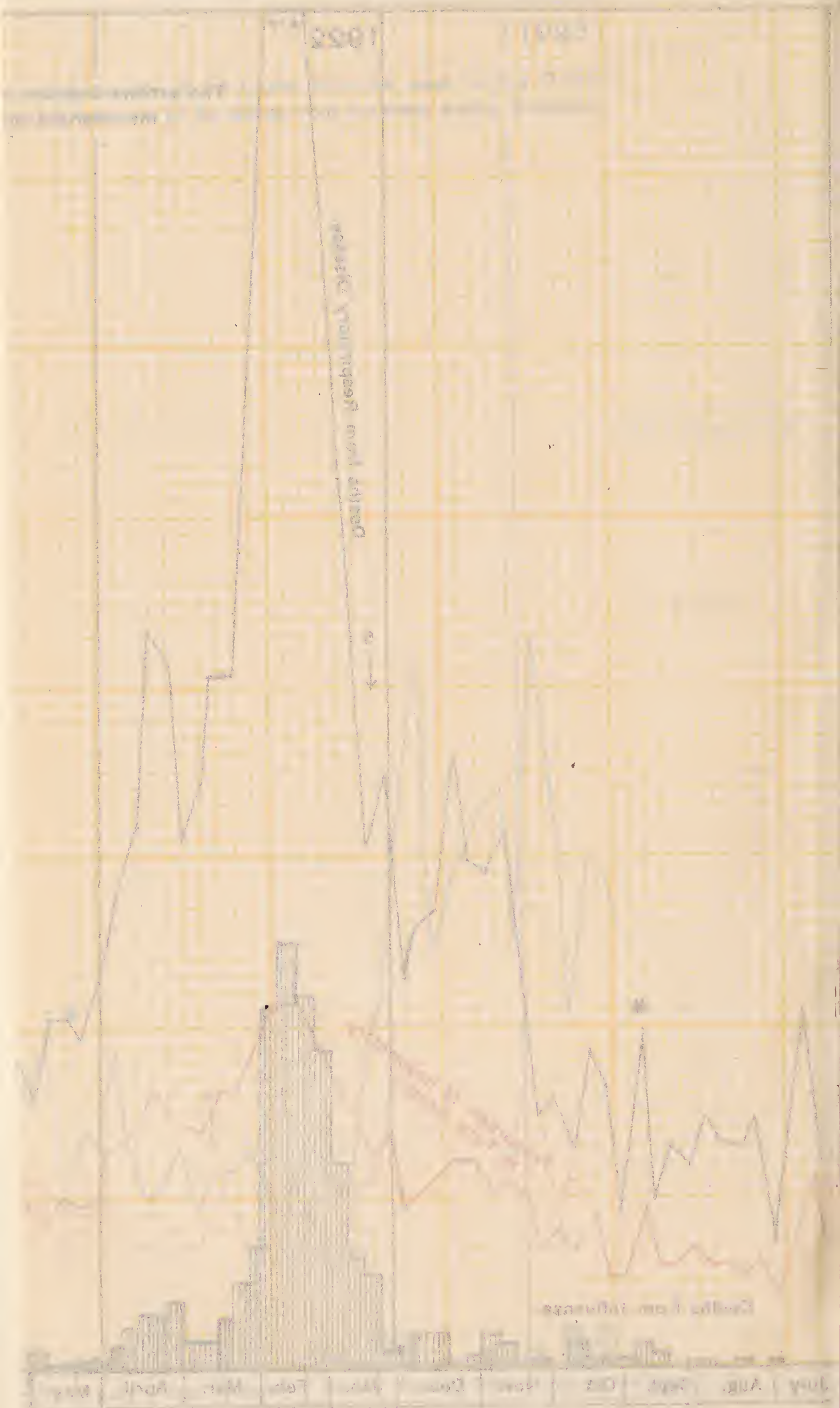
8

Weekly Deaths from Influenza, and from all Respiratory Diseases and proportion of Respiratory to Total Deaths.



1923

Deaths from influenza



occurred in April; but by the end of that month the outbreak had come to an end.

1922. Week ending	Total Deaths.	Deaths from Influenza.	Other respiratory diseases.	Circulatory diseases.
January 7th ...	246	2	70	18
February 18th	520	51	215	46

In the pandemic waves of Influenza occurring in 1918-20, one of the marked features was the predominance of young adults amongst those fatally affected, the age period 20 to 30 years suffering most heavily. In 1922, the distribution of deaths according to age had returned to the pre-war type and the highest proportion of deaths occurred at the age 60 to 70 years (see table, page 34). Children under ten years of age also suffered somewhat severely, a very large number of cases and 35 deaths occurring under that age. The school attendances were entirely disorganised and it was clear that the schools were in many cases acting as disseminating foci for the disease and were accordingly partially or entirely closed in 119 instances (see further page 73).

During the years 1918 and 1919 it was observed that there was an excessive proportion of female deaths compared to those of males. This disproportion did not continue during 1920 and 1921, and it appeared as if the excess of female deaths during 1918-19 was due to the absence of a considerable proportion of the male population on war service. During 1922 the excess of female deaths again reappeared in an accentuated form, there being 123 male and 210 female deaths. The excess was confined to the age periods 20 to 40 and over 60 years.

				Males.	Females.
Ages 0-20	...	...	...	20	19
Ages 20-40	...	...	...	24	51
Ages 40-50	...	...	...	20	23
Ages 50 and over	...	...	...	59	117

The excess at the child-bearing ages is probably due to the well-established fact that Influenza is particularly fatal to women during pregnancy and the puerperium, but the excess at the ages over 50 is the reverse of anticipation and is difficult to explain.

As has been pointed out in earlier reports influenza tends to recur periodically at intervals of 33 weeks or multiples thereof; the close correspondence between the anticipated and the actual time of recurrence is shown on diagram number 7.

CITY OF LIVERPOOL.

DEATHS FROM INFLUENZA ARRANGED BY AGES AND SEXES DURING THE YEARS 1891,
1900, 1919 TO 1922.

	Under 1	5	10	15	20	30	40	50	60	70	80	Over 80	Males.	Females.	TOTAL.
1891	8	3	8	11	33	41	55	48	20	2	132	115	247
1900	8	1	4	18	29	37	43	59	30	7	114	134	248
1918	162	60	87	304	242	152	130	90	35	6	583	805*	1,338
1919	102	26	66	225	203	155	133	105	40	17	539	624*	1,163
1920	4	1	6	44	36	24	24	21	20	2	97	94	191
1921	6	3	2	10	10	18	17	19	8	5	51	55	106
1922	25	1	4	26	48	43	48	60	48	19	123	210	333
The above deaths expressed as a percentage of the total deaths in each year :—															
1891	...	4.0	3.2	3.5	1.2	3.5	4.4	13.6	16.6	22.7	8.1	0.8			100
1900	...	4.4	3.2	0.2	0.2	1.6	7.3	11.7	14.9	23.8	12.1	2.8			100
1918	...	2.4	12.1	5.4	4.4	5.4	22.0	18.0	11.3	6.7	2.7	0.5			100
1919	...	3.7	8.6	4.3	2.2	5.7	19.7	17.8	13.6	9.2	3.5	1.5			100
1920	...	2.5	2.1	1.4	0.4	3.1	23.0	18.3	12.5	11.0	10.9	1.1			100
1921	...	6.6	5.6	1.0	2.8	1.9	9.3	17.0	16.4	17.9	7.5	4.7			
1922	...	2.2	7.7	1.3	0.3	1.3	7.8	15.0	13.5	18.8	15.0	5.9			100

*The excess of female over male deaths in 1918 and 1919 was due to the absence of many men on military service. In 1920 the proportion had returned to the normal.

The following table shows week by week the total number of deaths from all causes, the general death-rate, and the number of deaths from Influenza, Pneumonia, Bronchitis.

These figures do not include the deaths of Liverpool residents which occurred outside the City.

1922. Week ending.	Total Deaths.	Weekly Death Rate per 1,000 of Estimated Population	NUMBER OF DEATHS FROM			Total Respira- tory Deaths.	Percentage Proportion of Respira- tory to Total Deaths.
			Influenza.	Pneumonia and Broncho- Pneumonia	Bronchitis.		
JANUARY 7	246	15.9	2	33	34	70	28.5
14	250	16.1	11	30	29	62	24.8
21	311	20.1	14	38	43	87	28.0
28	361	23.3	25	64	55	120	33.2
FEBRUARY 4	391	25.3	38	66	71	149	38.1
11	457	29.5	44	114	77	194	42.3
18	520	33.6	51	103	101	215	41.3
25	378	24.4	40	88	64	155	41.0
MARCH 4	358	23.1	15	89	49	142	39.6
11	257	16.6	10	48	29	81	31.5
18	244	15.7	6	36	42	82	33.5
25	246	15.9	3	32	33	69	28.0
1 APRIL	219	14.1	3	23	37	62	28.3
	4,238	20.6	262	769	664	1,488	35.1
MAY 8	278	17.7	8	36	40	83	30.0
15	259	16.5	6	46	35	87	33.5
22	234	14.9	5	27	36	64	27.3
29	203	13.0	3	25	27	55	27.1
JUNE 6	203	13.0	2	17	20	40	19.7
13	217	13.8	1	23	18	42	19.3
20	211	13.5	1	23	18	42	20.0
27	185	11.8	3	15	15	32	17.3
JULY 3	191	12.2	—	21	13	37	19.4
10	154	9.8	2	21	9	31	20.1
17	178	11.4	—	17	32	41	23.0
24	148	9.4	2	7	10	18	12.2
1 AUGUST	169	10.8	—	15	14	29	17.1
	2,630	12.8	33	293	287	601	22.8
SEPTEMBER 8	163	10.4	—	12	13	26	15.9
15	163	10.4	1	18	18	37	22.7
22	169	10.8	3	13	10	25	14.7
29	144	9.2	—	12	11	23	16.0
OCTOBER 5	162	10.3	—	13	12	26	16.0
12	158	10.1	—	11	18	29	18.3
19	145	9.2	1	12	10	24	16.5
26	153	9.8	1	13	8	24	15.7
NOVEMBER 2	106	6.8	—	8	8	17	16.0
9	161	10.3	—	11	13	26	16.1
16	154	9.8	—	15	13	31	20.0
23	170	10.8	—	15	15	32	18.8
30	160	10.2	—	9	11	23	14.4
	2,008	9.7	6	162	160	343	17.1

1922. Week ending.	Total Deaths.	Weekly Death Rate per 1,000 of Estimated Population	NUMBER OF DEATHS FROM			Total Respira- tory Deaths.	Perce Prop o Res tory To Dea
			Influenza.	Pneumonia and Broncho- Pneumonia	Bronchitis.		
OCTOBER 7	183	11·7	2	20	15	36	19
14	183	11·7	2	16	13	30	16
21	188	12·0	1	18	18	38	20
28	184	11·7	1	25	13	39	21
NOVEMBER 4	202	12·9	4	21	19	44	22
11	195	12·4	4	31	31	64	31
18	237	15·1	—	35	47	84	31
25	194	12·4	—	23	23	48	22
DECEMBER 2	218	13·9	1	31	26	59	22
9	180	11·5	—	23	31	60	31
16	230	14·7	2	33	31	66	22
23	255	16·3	1	29	35	69	22
30	234	14·9	1	29	19	50	22
	2,683	13·0	19	334	321	687	22
Total 12 months ...	11,559	14·0	320	1,558	1,432	3,119	22

PUBLIC HEALTH (PNEUMONIA, DYSENTERY, ETC.).

REGULATIONS, 1919.

The following Statement shows the number of notifications received under the regulations and the number of deaths during 1921 and 1922 :—

	1921.		1922.	
	Cases.	Deaths.	Cases.	Deaths.
Acute Pneumonia ...	2,007	1,350	1,527	1,599
Malaria ...	90	3	43	6
Trench Fever ...	1	...	...	—
Dysentery ...	12	3	2	7
	2,110	1,356	1,572	1,612

Enquiry was made into all these cases; 1,238 cases of Influenzal Pneumonia were visited and 232 received assistance from nurses appointed for the purpose, 1,193 revisits being made.

The majority of the cases of Malaria were amongst ex-soldiers who had been infected whilst on active service in tropical climates. The remainder were amongst the sea-faring population and were principally persons infected on the African Coast.

DIGESTIVE DISEASES AND DIARRHŒA.

The following table shows the mortality from Digestive Diseases—including diarrhœa—in the City of Liverpool during the last 50 years:

		Actual Deaths.	Deaths expressed as a percentage of deaths from all causes.	Death-rate per 1,000 population.	Death-rates as a percentage of the 1871-80 rate.
1871-1880 ...	...	14,747	10·0	2·8	100·0
1881-1890 ...	...	13,186	9·4	2·4	85·7
1891-1900 ...	...	18,491	12·7	3·0	107·2
1900-1910 ...	...	18,163	12·0	2·5	89·3
1911-1920 ...	...	12,282	8·9	1·59	56·7
1921 ...	...	1,803	15·5	2·21	79·0
1922 ...	...	943	7·8	1·14	40·7

The deaths from digestive diseases, which had been very numerous prior to 1871, fell in the penultimate decade of last century, but rose again in the last decade. Since the early years of the present century there has been a marked decline in the number of deaths. This was especially so during the latter years of the war.

Diarrhœa and Enteritis form the greater part of the deaths from digestive diseases. Of these deaths approximately two-thirds occur in infants under one year of age. The age distribution of deaths from diarrhœa and enteritis during the past 50 years is shown in the next table.

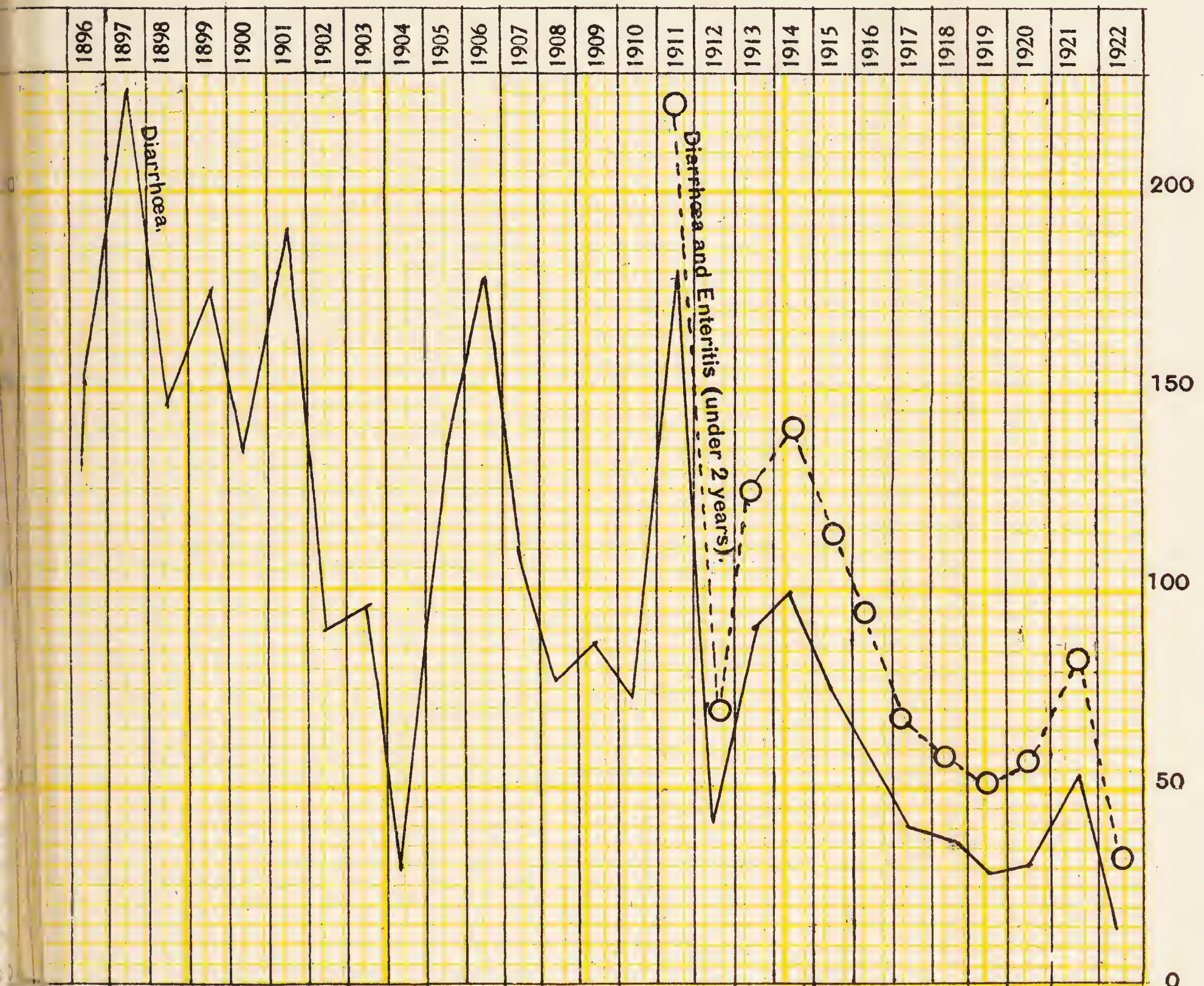
AVERAGE NUMBERS.						PER CENT.			
	1	2	5	Over 5 years	Total	1	2	5	Over 5 years
1871-1880 ...	559·9	170·4	36·3	79·4	846·0	66·2	20·1	4·3	9·4
1881-1890 ...	361·5	121·0	35·2	58·0	575·7	62·7	21·0	6·1	10·1
1891-1900 ...	577·4	167·7	40·8	60·1	846·0	68·0	19·8	4·8	7·2
1901-1910 ...	591·7	207·9	45·3	35·3	880·2	67·2	23·6	5·2	4·0
1911-1915 ...	619·6	285·4	58·6	43·2	1006·8	61·3	28·3	5·8	4·3
1916-1919 ...	312·2	104·5	31·2	63·5	511·5	61·0	20·4	6·1	12·4
1920 ...	382	61	17	29	489	79·1	12·5	3·5	5·9
1921 ...	514	169	33	66	782	65·7	21·7	4·2	8·4
1922 ...	224	46	17	38	325	68·8	14·1	5·2	12·0

Down to the year 1915 there was a decline in the proportion of deaths from diarrhœal diseases in persons over five years of age, but otherwise there was very little variation in the ages at death. During the war period, however, owing to the fall in the birth-rate, the proportions varied somewhat. Owing to the rapid rise in the birth-rate in 1920 the proportions at different ages were quite abnormal. In 1921, however, the proportions of death at different ages returned to the normal pre-war distribution.

Diarrhœa and Enteritis took a heavy toll of infant life during 1921, the number of infant deaths being 683. Mortality from Diarrhœa is always heavier in dry hot summers, and 1921 was exceptional in both respects. When comparison is made with earlier epidemic years during which the climatic conditions were favourable to the development of the disease it will be seen that the mortality has been very much reduced. In 1922, the climatic conditions were unfavourable to the spread of Diarrhœa, and the mortality from Diarrhœa and Enteritis at all ages was reduced to 325, of which number 270 were under two years of age, equal to a rate of 32·8 per 100,000 of the population, the lowest figure heretofore recorded. A noticeable feature of recent years has been that the height of the summer epidemic, which formerly occurred in August, about the 31st week of the year, has occurred progressively later and later in the year. In 1922 the peak of the epidemic,

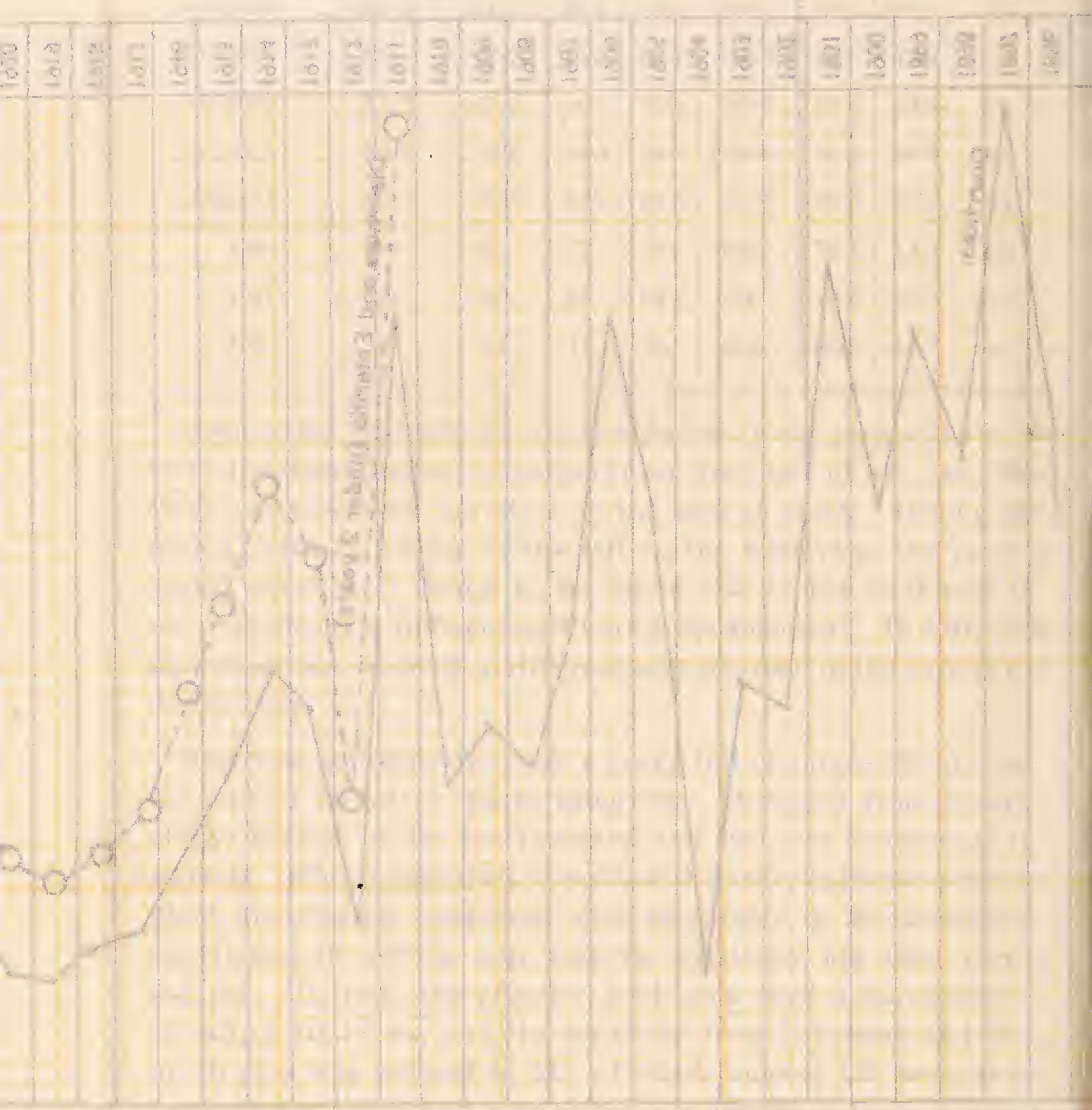
CITY OF LIVERPOOL.

Diarrhoea Death, Rates (all ages), per 100,000 Population, 1896-1922,
together with the combined rate from Diarrhoea
and Enteritis (under 2 years), for 1911-1922.

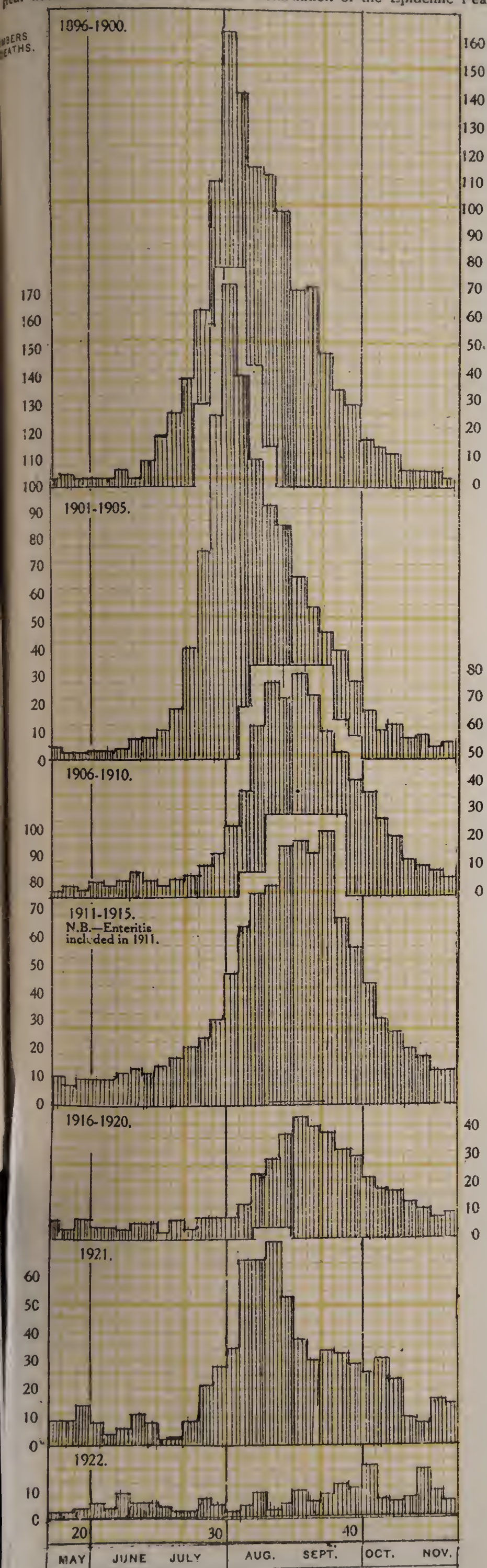


CITY OF LIVERPOOL

Area Death Rates (all ages), per 100,000 Population, 1886-1922
 together with the combined rate from Diarrhoea
 and Enteritis (under 5 years), for 1911-1922



from Diarrhoea, etc., during each week from the 18th to the 47th; Quinquennial Averages for 1896 to 1920 and the separate years 1921 and 1922. The great decline in Prevalence and the Retardation of the Epidemic Peak are shown.



if it may so be termed, was not reached until October, namely, in the 41st week. The diminution in the size of the epidemic in recent years and its concurrent retardation are well shown in the accompanying diagram.

The mortality rate per 1,000 of the Births registered in the City during the last two years from Diarrhœa and Enteritis (under 2 years of age) was 6·2. The mortality in the several districts of the City is shown in the subjoined table:—

	Births 1921-22.	Deaths.	Death Rate per 1000 births occurring during last two years.
Scotland	3,398	30	8·8
Exchange	2,337	29	12·4
Abercromby	2,348	19	8·1
Everton	7,656	48	6·3
Kirkdale	3,955	18	4·5
West Derby, West ...	5,072	37	7·3
Toxteth	6,320	41	6·5
Walton	3,409	12	3·5
West Derby, East ...	3,830	16	4·2
Wavertree	1,970	5	2·5
Sefton Park	1,168	3	2·6
Garston	1,387	11	7·9
Fazakerley	216	—	—
Woolton	305	1	3·3
	43,371	270	6·2

The experience of previous years points strongly to the importance of flies as carriers of infection and that collections of stable manure form the most important breeding places for these insects. Regular visits of inspection are paid to stables and the occupiers informed as to the desirability of regular weekly removals of manure. The following notice has been issued to the owners of stables in recent years with the object of securing the frequent removal of manure from the latter:—

NOTICE.

REMOVAL OF MANURE FROM STABLES.

The Health Committee are very desirous that Manure from Stables should be removed with as little delay as possible, and with this object in view, arrangements have been made with the City Engineer for its speedy removal.

On application to the City Engineer, Municipal Offices, Dale Street, Manure will be removed from stable yards as often as required, free of charge.

NOTIFICATION OF INFECTIOUS DISEASE.

The following is a list of the diseases notifiable in the City of Liverpool during 1922 :—

Anthrax	Paratyphoid Fever
Anterior Poliomyelitis	Plague
Cerebro-spinal Fever	Pneumonia, Acute Influenzal
Cholera.	Pneumonia, Acute Primary
Continued Fever	Polioencephalitis, Acute
Diphtheria	Poliomyelitis
Dysentery	Puerperal Fever
Enteric Fever	Relapsing Fever
Erysipelas	Scarlet Fever or Scarlatina
Encephalitis Lethargica, Acute	Smallpox
† German Measles	Tuberculosis (all forms)
† Measles.	Trench Fever
Malaria	Typhoid Fever
Membranous Croup	Typhus Fever.
Ophthalmia Neonatorum	

The numbers of notifications received by the Medical Officer during the past three years, were as follows :—

				<u>1920.</u>		<u>1921.</u>		<u>1922</u>
January	...	...	...	2,604	...	898	...	728
February	...	...	...	3,093	...	796	...	731
March	...	...	...	2,733	...	896	...	519
April	...	...	...	1,198	...	937	..	446
May	...	...	...	1,103	...	1,272	...	523
June	...	...	...	1,073	...	1,280	...	433
July	...	...	...	800	...	859	...	455
August	...	...	...	567	...	668	...	441
September	...	...	...	739	...	966	...	396
October	...	...	...	816	...	1,379	...	529
November	...	...	...	825	...	1,761	...	668
December	...	...	...	856	...	2,145	...	722
				<u>16,407</u>		<u>13,857</u>		<u>6,591</u>

† Measles and German Measles ceased to be compulsory notifiable on 31st October, 1920, but a system of voluntary notification has been continued as is also the case with Chickenpox.

The diseases were certified as follows:—

	<u>1920.</u>	<u>1921.</u>	<u>1922.</u>
Smallpox	10	1	2
Scarlet Fever	3,040	2,786	2,263
Enteric Fever	71	50	45
Paratyphoid Fever	4	1	—
Relapsing Fever	—	1	—
Typhus Fever	3	—	—
Puerperal Fever	60	46	55
Continued Fever	2	3	1
Diphtheria and Croup	1,527	1,090	874
Erysipelas... ..	519	486	532
Anthrax	10	5	8
Cerebro-spinal Fever	31	25	20
Acute Poliomyelitis	5	3	10
Measles and German			
Measles	7,110	6,000	2,405
Ophthalmia			
Neonatorum	766	660	669
Pneumonia and			
Influenzal Pneumonia	2,165	2,011	1,525
Malaria	169	99	46
Trench Fever	1	1	—
Dysentery... ..	17	17	3
Encephalitis Lethargica...	22	34	9
Chickenpox	874	538	531
Plague	1	—	—
	<u>16,407</u>	<u>13,857</u>	<u>8,998</u>

The following table shows the number, monthly distribution, and nature of cases of Infectious Disease coming under the notice of the Medical Officer of Health during the year 1922 :—

YEAR— 1922.	Enteric Fever.	Smallpox.	Scarlet Fever.	Measles and German Measles.	Diphtheria and Croup.	Puerperal Fever.	Erysipelas.	Cerebro-spinal Fever.	Poliomyelitis.	Ophthalmia Neonatorum.	Pneumonia & Influenza Pneumonia.	Malaria.	Dysentery.	Encephalitis Lethargica.	Whooping Cough.
January ...	4	...	263	822	108	6	56	1	...	39	190	7	...	...	303
February	4	...	187	307	92	4	38	1	2	54	376	3	1	...	111
March ...	3	...	216	238	93	6	25	2	...	52	98	2	...	1	241
April .....	...	...	221	293	77	9	47	2	...	62	103	1	...	1	170
May	3	1	200	378	58	4	40	3	1	66	74	1	...	...	197
June	2	...	141	442	60	2	31	1	1	54	59	7	...	...	174
July	1	...	197	348	80	6	44	3	...	68	61	3	1	...	123
August ...	1	1	143	99	53	3	37	1	...	59	52	5	...	1	221
September	3	...	184	185	61	6	49	1	4	46	65	7	...	...	152
October ...	5	...	193	103	68	1	49	1	2	58	78	1	...	1	93
November	1	...	221	161	84	7	51	1	1	43	125	2	...	...	93
December	3	...	253	194	119	6	55	1	...	68	246	4	...	1	147
TOTAL...	30	2	2419	3570	953	60	522	18	11	669	1527	43	2	5	2025
Removed to hospital	25	2	2005	404	862	55	225	15	5	63	642	16	1	3	96

The number of patients removed to hospital includes those admitted to the general hospitals, as well as those admitted to the city infectious diseases hospitals.

The following table gives a summary of cases of Infectious Disease coming under the notice of the Medical Officer of Health during the last six years:—

DISEASE.	1917	1918	1919	1920	1921	1922
Smallpox	2	—	13	9	—	2
Plague	—	—	1	1	—	—
Typhus Fever	1	2	—	—	1	—
Enteric Fever	54	65	39	44	30	31
Scarlet Fever	2,277	3,020	2,797	3,230	3,062	2,419
Measles and German Measles	9,230	9,268	3,983	11,448	9,143	3,570
Diphtheria	1,117	1,494	1,959	1,654	1,182	953
Puerperal Fever.....	33	28	55	69	60	60
Erysipelas	383	454	564	505	471	522
Cerebro-Spinal Fever	34	17	26	27	26	18
Poliomyelitis and Polioen- cephalitis	4	6	2	6	6	11
Ophthalmia Neonatorum ...	516	587	672	766	660	669
Anthrax	7	10	14	4	—	4
Encephalitis Lethargica	—	—	2	17	27	5

DEATHS FROM INFECTIOUS DISEASE.

Table shewing the deaths from Infectious Disease occurring during the last six years:—

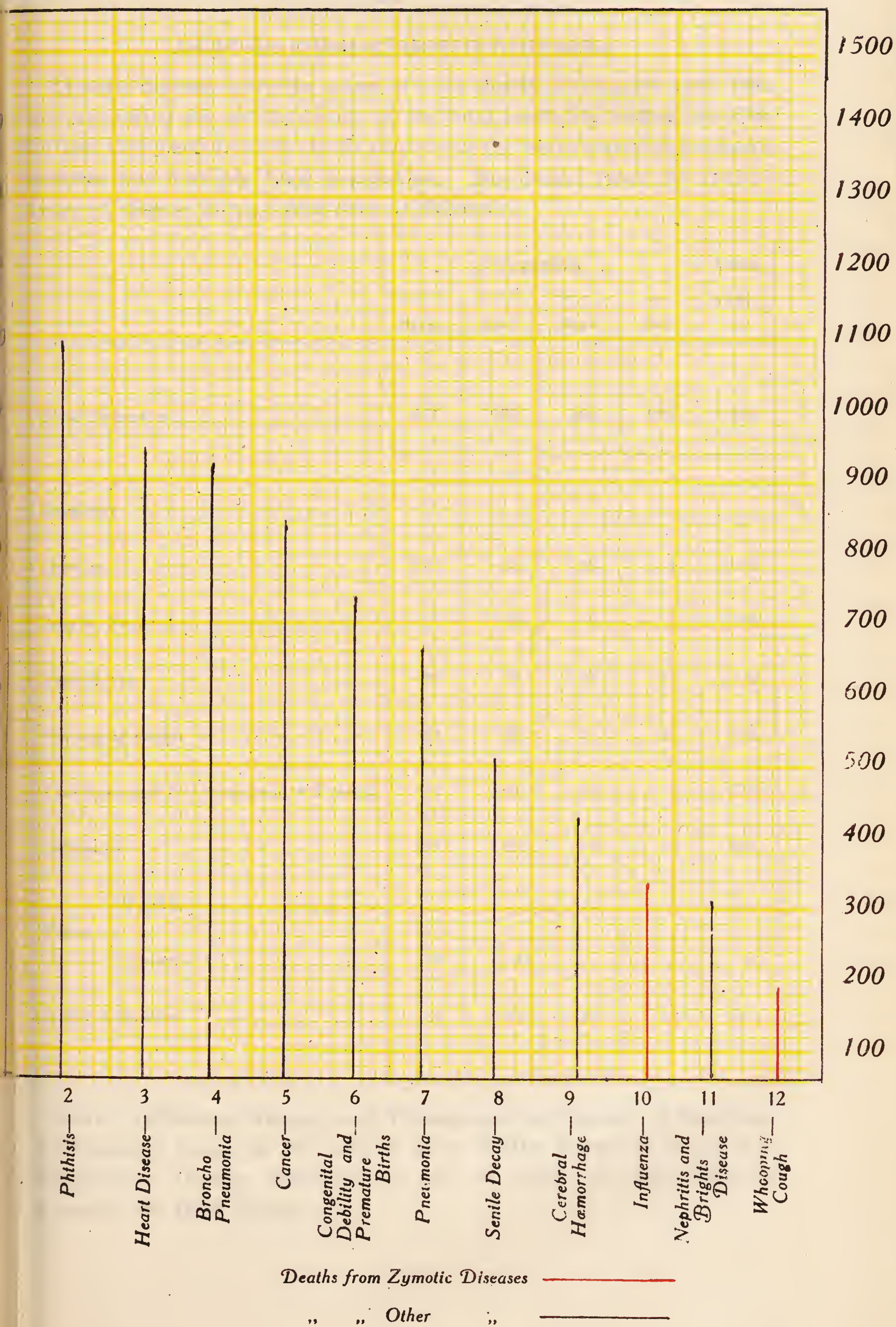
DISEASE.	1917	1918	1919	1920	1921	1922
Smallpox	1	—	1	2	—	—
Plague	—	—	1	1	—	—
Typhus Fever.....	—	—	—	—	—	—
Enteric Fever	15	13	7	8	8	6
Scarlet Fever	71	133	74	70	45	39
Measles and German Measles	436	407	103	387	328	171
Diphtheria	143	228	212	188	97	91
Puerperal Fever.....	16	17	20	37	34	33
Erysipelas	14	15	23	26	18	26
Cerebro-Spinal Fever	23	12	22	18	19	14
Poliomyelitis and Polioen- cephalitis	3	5	—	—	4	4
Anthrax	1	—	3	1	—	—
Encephalitis Lethargica	—	—	—	2	5	3
Whooping Cough	132	364	53	228	210	182

CITY OF LIVERPOOL.

COMPARATIVE VIEW OF TWELVE OF THE PRINCIPAL CAUSES OF DEATH DURING THE YEAR 1922.

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DEATHS FROM ZYMOTIC DISEASES.

Zymotic diseases were the cause of 1,312 deaths during the year 1922, and accounted for 10·9 per cent. of the total mortality within the City during this period. The death rate from the seven principal zymotic diseases was 0·65 per 1,000 population. The deaths from the various types of disease during 1922 were as follows:—

	QUARTERS.				YEAR 1922.
	March.	June.	Sept.	Dec.	
Total Zymotics	677	223	180	232	1,312
Smallpox .....	...	...	...	...	...
Measles	130	24	13	4	171
Scarlet Fever.....	17	10	9	3	39
Diphtheria	33	19	12	27	91
Whooping-cough	94	36	31	21	182
Diarrhoea and Enteritis (under 2 years)	57	47	54	112	270
Influenza	275	33	6	19	333
Fever {	Typhus .....	...	...	...	...
	Enteric	3	2	1	6
Other Zymotics	68	52	55	45	220

NOTE.—Influenza, Measles, and Whooping-cough appear to have been predisposing causes in the case of many deaths primarily ascribed to Respiratory Disease inasmuch as one or other of these Zymotics preceded the fatal illness.

THE FOLLOWING TABLE SHOWING THE ANNUAL AVERAGE NUMBER OF DEATHS FROM SEVEN OF THE PRINCIPAL ZYMOTIC DISEASES DURING EACH OF THE LAST FIVE DECENNIAL PERIODS, IS INTERESTING AND INSTRUCTIVE. THE DECLINE IN THE MORE FORMIDABLE FORMS OF INFECTIOUS DISEASES IS VERY MARKED.

Years.	Small Pox.	Typhus.	Enteric.	Scarlet Fever.	Measles.	Whooping Cough.	Diarrhoea.
1866 to 1875	237.4	652.8	† —	789.4	425.7	496.8	995.3
1876 to 1885	90.8	238.0	126.4	421.2	517.8	472.3	658.4
1886 to 1895	8.8	37.1	153.0	257.5	399.5	322.4	600.6
*1896 to 1905	19.5	25.1	134.4	201.3	329.0	330.4	1,061.9
1906 to 1915	0.04	5.7	50.3	141.6	438.0	296.7	848.0
1922.....	—	—	6	39	171	182	135

* Including extended City area.

† Records not available.

ANNUAL AVERAGE NUMBER OF DEATHS FROM SEVEN OF THE PRINCIPAL ZYMOTIC DISEASES
DURING EACH OF THE LAST FIVE DECENNIAL PERIODS, DISTINGUISHING THOSE
OF PERSONS ABOVE AND BELOW FIVE YEARS OF AGE.

Years.	Smallpox.		Typhus.		Enteric.		Scarlet Fever.		Measles.		Whooping Cough.		Diarrhœa.	
	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.
1866 to 1875	141.7	95.7	* —	* —	* —	—	187.7	601.7	14.4	411.3	9.9	486.9	105.7	889.6
1876 to 1885	62.5	28.3	† 190.0	† 5.1	† 110.3	† 12.1	137.0	284.2	35.4	482.4	18.6	453.7	61.9	596.5
1886 to 1895	6.2	2.6	36.2	.9	142.0	11.0	87.6	169.9	28.3	371.2	15.1	307.3	60.2	540.4
**1896 to 1905	14.5	5.0	24.2	.9	128.4	6.0	61.7	139.6	17.1	311.9	11.9	318.5	53.6	1,008.3
1906 to 1915	.04	—	5.5	.2	49.0	1.3	50.9	90.7	23.9	414.1	9.2	287.5	30.8	817.2
1922	—	—	—	—	6	—	16	23	6	165	5	177	10	125

* During these years the ages at death from Typhus and Enteric were not differentiated.

† During the six years, 1880-1885.

** Including extended City area.

The following table shows the number of deaths, the annual average death-rate per 100,000 of the population from the undermentioned forms of disease during the last six decades, 1856 to 1915, and during 1922:—

DISEASE.	Average Population	1856 to 1865.	1866 to 1875.	1876 to 1885	1886 to 1895.	1896† to 1905.	1906‡ to 1915
		443,938.	493,405.	538,651.	536,974.	691 351.	747,015.
Scarlet Fever	{ Total Deaths ... Rate per 100,000 per annum.	5,994 135.0	7 894 159.9	4,212 78.1	2,575 47.9	2,0.3 29.1	1,416 19.0
Typhus Fever	{ Total Deaths ... Rate per 100,000 per annum.	7,482 168.5	6,528 132.2	2,380 44.1	371 6.9	251 3.6	57 0.8
Enteric Fever	{ Total Deaths ... Rate per 100,000 per annum.	* —	* —	1,264 21.5	1,530 28.4	1,344 19.3	503 6.7
Measles	{ Total Deaths ... Rate per 100,000 per annum.	3,215 72.4	4,257 86.2	5,178 96.1	3,995 74.3	3,290 47.5	4,380 58.6
Whooping Cough	{ Total Deaths ... Rate per 100,000 per annum.	4,779 107.6	4,968 100.6	4,723 87.6	3,224 60.0	3,304 47.7	2,967 39.7
Smallpox	{ Total Deaths ... Rate per 100,000 per annum	1,673 37.6	2,374 48.1	908 16.8	88 1.6	195 2.8	3 0.4
Phthisis	{ Total Deaths ... Rate per 100,000 per annum.	15,572 350.7	16,476 333.9	13,754 255.3	11 436 212.9	12,632 182.7	12,010 160.7

† City Boundaries extended in 1895, 1902, 1905.

* Records not available.

‡ „ „ „ 1913.

DIABETES.

The following table shows the incidence of fatal cases of Diabetes in Liverpool since 1890:—

	Actual Numbers.			Average for 5 years.			Rate per 100,000	Ratio of Males to Females.
	Males.	Females.	Total.	Males.	Female.	Total.		
1894	55	45	100	11.0	9.0	20.0	3.8	1.22
1899	99	76	175	19.8	15.2	35.0	5.3	1.30
1904	132	100	232	26.4	20.0	46.4	6.5	1.32
1909	153	124	277	30.6	24.8	55.4	8.4	1.23
1914	162	153	315	32.4	30.6	63.0	8.4	1.06
1919	153	137	290	30.6	27.4	58.0	7.4	1.12
1920	25	41	66	28.7	41.6	70.3	8.6	0.69
1921	21	36	57					
1922	40	48	88					

The death-rate from Diabetes rose steadily up till 1910-14. It is probable that this rise was largely due to improved diagnosis. During the War the number of deaths showed a distinct fall, especially in 1917 and 1918; this was a real fall and not merely due to the absence of males on military service as, on the average of five years, females were equally affected with males. Since the War the figures have again risen, and are slightly above the average for the decade 1910-19. The disparity, in the incidence, between the two sexes, previously in favour of the females, has since 1904 tended to disappear. In 1890-1894, 55 per cent. of the deaths were of males; but in 1920-22, the position was reversed and only 40.8 per cent. were of males.

CANCER.

DEATHS FROM CANCER, AND THE PART OF THE BODY AFFECTED, DURING THE YEARS 1917 TO 1922.

Part of the Body affected.	1917.			1918.			1919.			1920.			1921.			1922.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Buccal Cavity	61	8	69	76	9	85	63	6	69	67	5	72	79	7	86	87	8	95
Stomach, Liver, etc	120	112	232	122	110	232	131	121	252	152	129	281	123	122	245	132	113	245
Intestines, etc.	93	70	153	84	82	166	77	81	158	88	80	168	78	87	165	68	70	138
Breast	1	62	63	1	51	52	—	68	68	—	75	75	1	72	73	—	69	69
Female Genital Organs ...	—	113	113	—	101	101	—	107	107	—	90	90	—	107	107	—	102	102
Parts not specified	77	40	117	72	42	114	81	48	129	102	58	160	148	66	214	119	80	199
Totals.....	342	405	747	355	395	750	352	431	783	409	437	846	429	461	890	406	442	848

DEATHS FROM EXCESSIVE DRINKING, &c.

The number of deaths from drink is still very low when compared with pre-war years. During the year 1922 they numbered 12, which is the lowest figure ever recorded in the City from this cause.

The number of deaths of infants under one year of age from suffocation shows an increase on the figure of the previous year, but is still well below the years prior to 1921.

Improved habits and conditions, wider educational influences and other agencies, including those associated with the welfare of motherhood and infancy have all played their part in promoting a more temperate use of alcoholic drinks with results which are eminently satisfactory.

Housing operations so far as they have gone have unquestionably contributed towards improving the general conditions of life and social habits of the people formerly housed in insanitary surroundings in slum areas.

The improved conditions of the children is especially noticeable; the reports in connection with Medical Inspection of School Children in the poorer localities show welcome improvement, the details in reference to this subject being given in the Annual Report to the Education Committee.

The following tables give the actual figures for the past nine years of the deaths from excessive drinking, and the deaths of infants under one year of age from suffocation. The appended chart shows the deaths from excessive drinking since the year 1903.

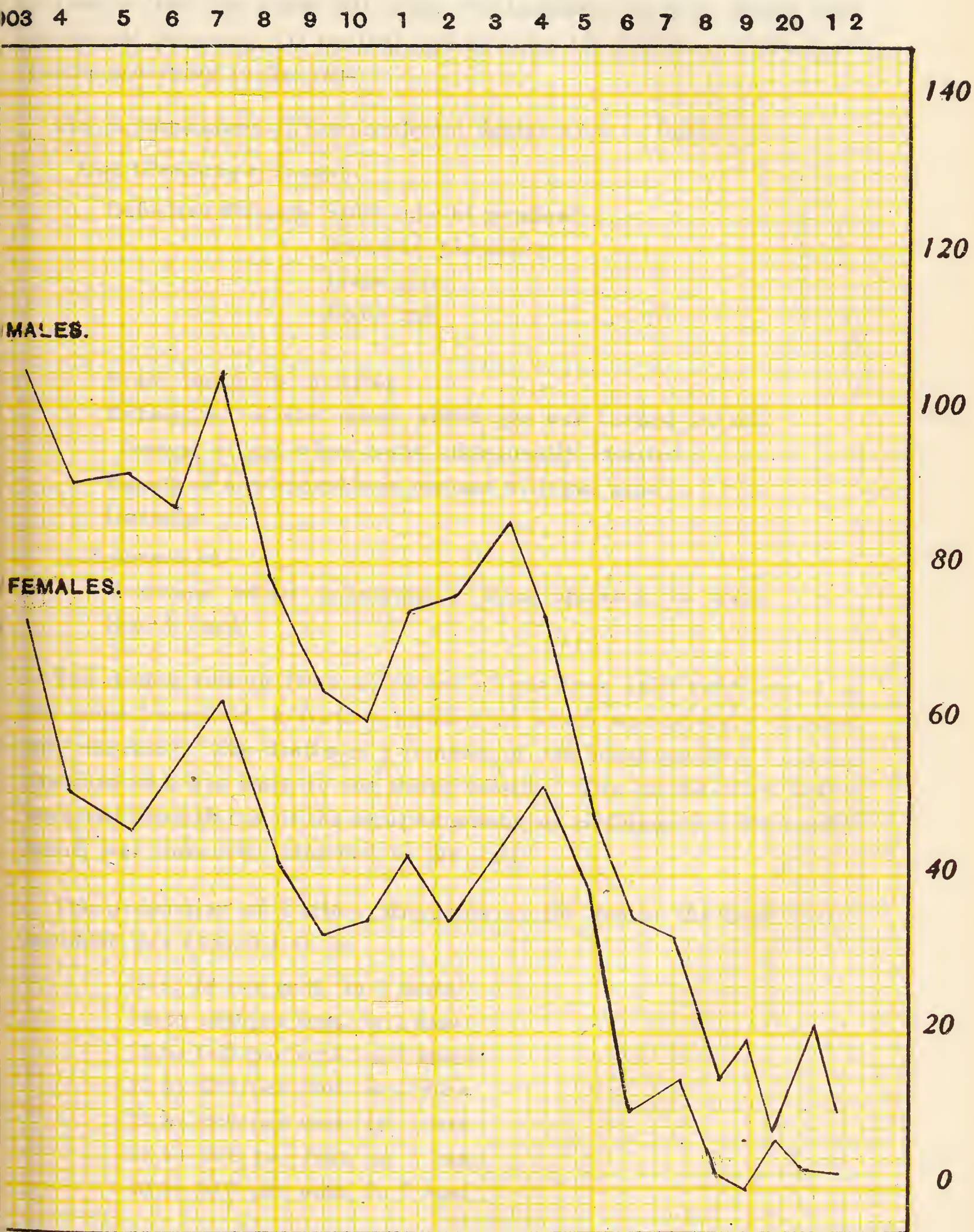
YEAR.	MALES.	FEMALES.	TOTAL.
1914	73	52	125
1915	48	38	86
1916	35	9	44
1917	33	15	48
1918	14	2	16
1919	19	—	19
1920	7	7	14
1921	21	3	24
1922	10	2	12

The deaths of infants under one year of age from suffocation have been as follows :—

YEAR.	DEATHS.
1914	76
1915	50
1916	36
1917	23
1918	26
1919	25
1920	23
1921	12
1922	18

Deaths from excessive drinking during the 20 years 1903 to 1922.

Marked reduction in number of deaths coincides with period
of restricted sale of Alcoholic Liquors.



Deaths from excessive drinking during the 20 years
1903 to 1922.

Marked correlation in number of deaths coincides with period
of reported sale of Alcohol in Liverpool

1 2 3 4 5 6 7 8 9 10 11 12



DEATHS FROM GAS POISONING.

Deaths from this cause fall under two headings, namely, deaths from accidental poisoning (17 deaths) and suicides (13 deaths), a total of 30 deaths occurring in the year.

The circumstances of the accidental deaths were as follows :—

Gas Company's Supply.

Defective fittings—Split tube of pendant	...	...	...	4
Amateur plumbing	...	...	...	3
Loose tap	...	...	...	2
Loose tube	...	...	...	1
			—	10
Fractured main in street	...	...	...	2
Exhaustion of slot meter whilst gas was turned on and escape of gas when coins subsequently inserted			...	2
Fusing of electric cable in contact with gas pipe	...		...	1
Doubtful	...	...	...	1

Dowson Gas.

Overcome whilst adjusting a loose stopcock at Dock Board Yard	1
---	-----	-----	-----	-----	-----	-----	---

The deaths arising from an escape of gas from split tube were 4 in the same household, a further member of which was severely affected, but recovered. The deaths of 2 inmates of one house resulted from the fracture of a gas main in the street outside. Two of the other deaths occurred through one of the occupants hanging clothing on a gas-bracket which was insecurely attached to the wall.

The proportion of Carbon Monoxide in the gas at the time of the accident was reported to be

- Over 16 per cent. in 3 cases.
- 15 to 15·9 per cent. in 1 case.
- 14 to 14·9 per cent. in 3 cases.
- 13 to 13·9 per cent. in 0 case.
- 12 to 12·9 per cent. in 1 case.
- 11 to 11·9 per cent. in 2 cases.
- 10 to 10·9 per cent. in 1 case.

The Dowson Gas contains approximately 25 per cent. of carbon monoxide.

Illuminating gas prepared from the distillation of coal contains about 7 per cent. of carbon monoxide. Water Gas, Dowson Gas, Producer Gas, etc., contain much higher proportions of this dangerous gas and the increased proportion of carbon monoxide in the public supply is due to admixture of water gas with it. The greater use of gases containing a high proportion of carbon monoxide, both for industrial purposes and for general use, has been associated with an increase in the number of deaths attributed to gas poisoning.

Several suggestions have in the past been made to diminish this hazard, such as the proposal to add some strongly smelling substance to the gas, thus rendering any escape of gas more apparent. A recent invention in which the gas is passed over some catalytic agent, the carbon monoxide being thereby, in the presence of moisture, converted into a mixture of hydrogen and carbon dioxide which are in this connection innocuous, may possibly effect a solution of the difficulty.

MATERNITY and CHILD WELFARE.

One of the outstanding features of progress in Public Health is the remarkable fall in the rate of infant mortality in large centres. It is interesting to recall that during the years 1771-77, of 31,951 children admitted to the Paris Foundling Hospital, 25,476 (80 per cent.) died before completing the first year, as against 7,601 out of 15,104 during 1820-22. At the Dublin Foundling Asylum, during 1775-96, only 45 survived out of 10,272 (99.6 per cent. mortality).

It is satisfactory to record that during the year 1922 the fall of the infantile mortality rate in the City to 96 per 1,000 births is the lowest on record. A glance at the chart facing page 58 will show how the rate, in spite of fluctuations in individual years, has steadily declined during the last twenty-five years. At the beginning of this period the figure was more than double what it is to-day, namely, over 190 per 1,000 births.

It is very gratifying to record this decline, and moreover, it may be noted that the numbers of deaths from all the usual forms of infantile disease, such as Broncho-pneumonia, Convulsions, Prematurity, etc., have been reduced, but the most markedly affected cause is the one which, in former years, frequently proved the most fatal, namely, epidemic Diarrhœa. The number of deaths under one year of age from this cause in the year 1922 was 224, as against an average of 1,000 or 1,100 twenty-five years ago. No doubt this gratifying result is due to a variety of causes, but one which has most materially hastened the decline is the initiation and carrying-on by the Health Committee of schemes for the promotion of the welfare of motherhood and infancy, including the work of the Health Visitors, the Day Nurseries, Infant Welfare Clinics and Milk Depôts. It is unfortunate that a corresponding reduction cannot be recorded in the case of the mothers. No doubt the problems surrounding maternity are more difficult to solve than those relating to the lives of infants, but closer attention is being paid to the dangers to which the mothers are subject and which at the present time are not far removed from those of twenty-five years ago. A highly important step, however, has been made in providing Maternity Homes, and Ante-natal and Post-natal Clinics, as it has been demonstrated that a large proportion of the accidents which occur during pregnancy and child-birth can be successfully forestalled and prevented if the patient is under medical supervision previous to her confinement. Means can also be taken at the Post-natal Clinics to assist in restoring the mother to her normal health. The expansion of

these arrangements, which are now becoming widely known and extensively adopted, should assist materially in reducing the preventable deaths of women during child-birth, and reduce not only the preventable deaths, but also the sickness amongst women caused by unskilful or neglectful midwifery.

During the year the University Settlement Maternity and Child Welfare Centre in Upper Parliament Street was taken over for administration and financial purposes by the Corporation. It is a well-equipped Centre containing an Ante-natal Clinic, an Infant Clinic, and a Dental Clinic for expectant and nursing mothers, and the Corporation have also been fortunate in retaining the services of several voluntary workers who have done extremely useful work in carrying on the activities of this Institution. The establishment serves a district which is eminently in need of assistance of this character, and will be a valuable adjunct to the Maternity and Child Welfare Scheme of the Corporation.

One cannot dissociate from child welfare work the equally important one of the health of the school child, and although every effort is made to co-ordinate the work of the two authorities concerned, there is good ground for the belief that closer amalgamation will be beneficial both to the children and to the service.

Under one body, the fusion of control of activities designed with the object of improving the welfare of motherhood, and childhood up to the end of school age, would be attended with many advantages which may be summarised as follows:—

- (1) Convergence of aim, with comprehensive instead of departmental views.
- (2) A large saving of money would result, as the same staff of doctors and nurses and the same premises could be utilised—a saving in capital outlay and running expenses.

Under such a Scheme the school doctors and nurses would be available for attendance at Baby Clinics, Day Nurseries and Nursery Schools, as well as the elementary schools. Records of all defects and illnesses would be kept in the various Infant Welfare departments, and subsequently transferred to the School departments. Incidentally the increased scope of work would make the School Medical Officer's work more interesting and varied, whilst less frequent changes in the staff would result in increased efficiency.

The preventive measures adopted for further protecting child life have been fully dealt with in Special Reports made to the Health Committee by the Medical Officer of Health.

The relation which the deaths of infants under one year of age has borne to every thousand births in the various districts of the City during the year 1922 and the average of the previous five years, 1917-1921, is shown in the following table, the detailed causes of death being set out in Table 4 (Appendix).

DISTRICTS.	Number of Births. 1922.	Number of Deaths under 1 year of age. 1922.	Deaths under 1 year per 1000 Births. 1922	Average number of Deaths under 1 year per 1000 Births 1917-1921
Scotland	1,721	207	120	148
Exchange	1,203	160	133	167
Abercromby	1,142	114	100	119
Everton	3,762	392	104	105
Kirkdale	2,001	204	102	124
West Derby (West)	2,459	234	95	109
Toxteth	3,104	311	100	111
Walton	1,688	124	73	89
West Derby (East)	1,926	136	71	88
Wavertree	931	58	62	86
Toxteth—(East)	558	28	50	71
Garston	708	66	93	101
Fazakerley	112	10	89	94
Woolton	152	8	53	83
City	21,467	2,052	96	114

The following table shows the number of deaths of infants below one year of age and the rate per 1,000 births during the last twenty years:—

Year.				No. of Deaths below One Year of Age.	Rate per 1,000 Births.
1903	...	...	...	3,775	159
1904	...	...	...	4,735	196
1905	...	...	...	3,710	154
1906	..	...	...	4,137	171
1907	...	..	...	3,383	143
1908	...	...	...	3,355	140
1909	...	...	...	3,377	143
1910	...	...	...	3,216	139
1911	...	...	...	3,466	154
1912	...	...	...	2,778	125
1913	...	...	...	2,987	132
1914	...	...	...	3,219	139
1915	...	...	...	2,866	133
1916	...	...	...	2,421	117
1917	...	...	...	2,071	115
1918	...	...	...	2,137	124
1919	...	...	...	2,055	110
1920	...	...	...	2,826	113
1921	...	...	...	2,339	107
1922	...	...	...	2,052	96

INFANT MORTALITY PER 1000 BIRTHS. 1895—1922.

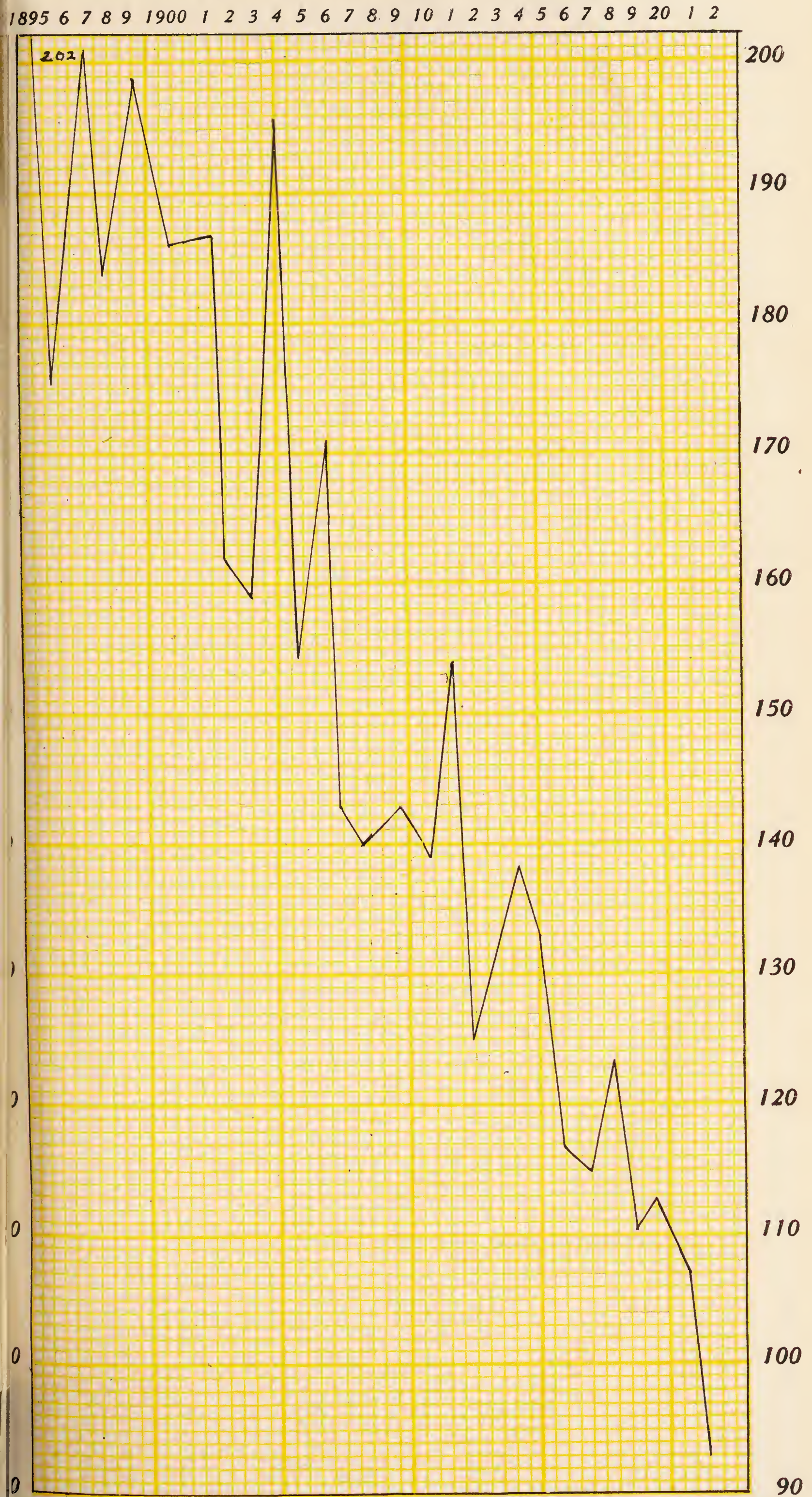


Chart shewing the principal Causes of Deaths of Infants, Under One Year of Age, during 1922.

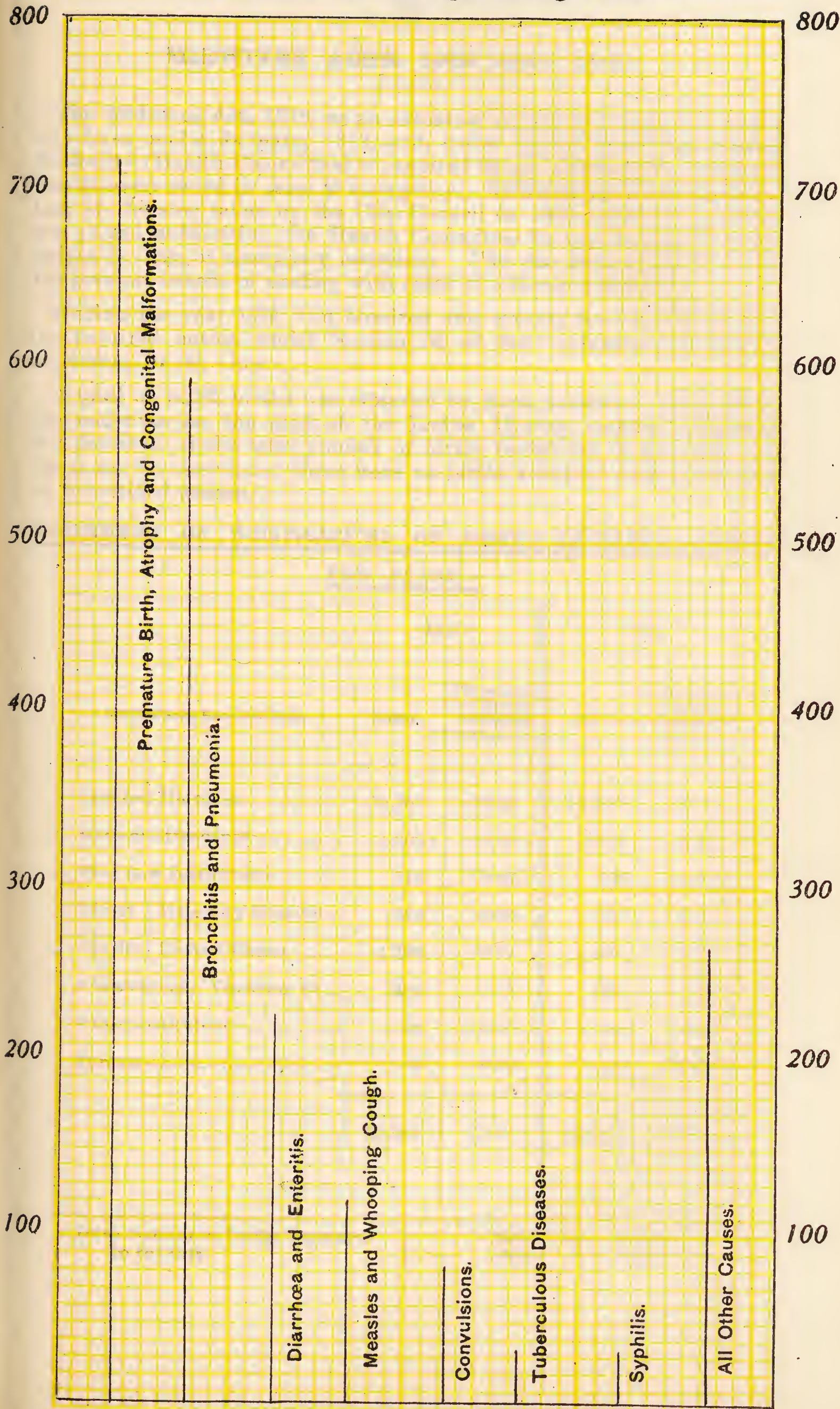


Chart showing the principal Causes of Death of Infants Under One Year of Age during 1932



MIDWIVES ACTS, 1902 AND 1918.

The Midwives Act, 1918, as an extension of the principal Act, came into force on 1st January, 1919, and, under it, the Local Supervising Authority (Health Committee) is required to pay the fee of all medical practitioners called in cases of emergency. This section is the confirmation of the step taken by the City Council in 1904, when a resolution was passed authorising the Health Committee to pay the sum of one guinea in cases of emergency assistance. This has been found to be of the greatest benefit in dealing with cases of difficult midwifery.

During the year 1922, two hundred and seventy-four midwives gave the required notice, under Section 10, of their intention to practise midwifery in the City.

A total of 14,323 births was attended by these midwives, and 1,400 by the midwives on the staff of the Ladies' Charity, making altogether 73·2 per cent. of the total number of births registered in the City. So far as can be ascertained there were no births attended during the year by uncertified women.

STATEMENT OF NOTIFICATIONS OF BIRTHS RECEIVED DURING THE YEARS:—

Notifications Received from	1921.		1922.	
	Births.	Percentage of Births Registered in the City.	Births.	Percentage of Births Registered in the City.
Certified Midwives	15,351	70·09	14,323	66·72
Medical Attendants.....	1,902	8·68	1,798	8·38
Poor Law Institutions	772	3·52	943	4·40
Ladies' } Maternity Hospital...	670	3·06	740	3·50
Charity } District Homes	1,232	5·62	1,400	6·52
"Rest Home," Chatham St...	259	1·18	317	1·48
Other Institutions	58	0·26	54	0·25
Parents	18	0·09	14	0·07
	20,262	92·50	19,589	91·25

Total Number of Births registered in the City	}	1921	—	21,904
		1922	—	21,467

STILL BIRTHS.

The number of still-births notified during 1922 was 740, of which number 493 were notified by midwives, being at the rate of 3·4 per cent. of the births attended by them.

In no case does a midwife give a certificate of still-birth unless she is present at the time of birth; she is instructed that if the birth should take place before her arrival she must report the matter to the Coroner, who, after enquiry, grants a certificate for the burial of the body.

Enquiries were made into the circumstances of these still-births, and the following are the figures relating to the months of pregnancy during which the still-births took place:—

Sixth month	...	...	...	...	...	26
Seventh month	...	...	...	...	...	129
Eighth month	...	...	...	...	...	94
Ninth month	...	...	...	...	...	244
						<hr/> 493 <hr/>

Of these, 438 were examined by the City Bacteriologist, and 30 or 6·8 per cent., gave a positive reaction, indicating that the cause of the still-birth was probably syphilis (see page 203). In these cases every effort was made to induce the patient to undergo treatment under their private medical attendant or at one of the Venereal Diseases Clinics.

The number of visits paid with reference to still-births was 565.

MEDICAL ASSISTANCE.

Under the Rules issued by the Central Midwives' Board, a midwife must advise that medical assistance shall be called in where there is any abnormal circumstance connected with the confinement.

The following table gives the details of the complications for which medical assistance was required during the past two years:—

MOTHER :						<u>1921.</u>	<u>1922.</u>
Abnormal Presentation :							
Brow or Face Presentation	...	...	...	...	...	24	30
Occipito-posterior Presentation			...	...	...	50	48
Transverse Presentation	...	...	...	...	...	31	44
Breech Presentation	...	...	...	...	...	45	39
Foot Presentation	...	...	...	...	...	10	8
Cord Presentation	...	...	...	...	...	22	34
Placenta Prævia ..	...	...	...	...	...	15	11
Deformed Pelvis	...	...	...	...	...	56	34
Ante-partum Hæmorrhage	...	...	...	...	...	105	86
Post-partum Hæmorrhage	...	...	...	...	...	86	68
Retained Placenta or Membranes	...	...	...	...	...	125	129
Ruptured Perinæum	...	...	...	...	...	360	362
Multiple Births	...	...	...	...	...	29	12
Abortion or Premature Birth	...	...	...	...	...	66	57
Pyrexia	...	...	...	...	...	164	145
Eclampsia	...	...	...	...	...	17	32
Obstructed Labour, Uterine Inertia, or requiring							
Instrumental Assistance...	...	...	...	...	...	636	534
Influenza	...	...	...	...	...	18	13
Various	...	...	...	...	...	197	160
CHILD :							
Injury at Birth	...	...	...	...	...	5	5
Malformation	...	...	...	...	...	57	32
Feebleness and Prematurity	...	...	...	...	...	235	269
Skin Eruption	...	...	...	...	...	25	39
Ophthalmia	...	...	...	...	...	136	217
Other conditions in child	...	...	...	...	...	93	92
						<u>2,607</u>	<u>2,500</u>

The number of visits of enquiry with regard to Accounts for Emergency assistance during the year was 2,813.

PUERPERAL FEVER.

The number of cases of Puerperal Fever notified to the Medical Officer of Health during the year was 60, of which 33 proved fatal. This gives a death-rate of 1·54 per 1,000 births in the City.

Fifty-five cases were removed to hospital, viz. :—4 to Brownlow Hill Infirmary; 15 to Mill Road Infirmary; 27 to Walton Institution; and 4 to Toxteth Infirmary, 1 to Maternity Hospital, 1 to Royal Infirmary, and 3 to City Hospital, Fazakerley.

After the usual enquiries were made, 43 cases (of which 18 died) were found to have occurred in the practice of midwives. The number of visits paid in this connection was 60.

The following table shows the annual rate of mortality per 1,000 of the total births since the year 1916 :—

Year.	Total number of births in the City.	Total number of :—		Death rate per 1,000 births.	Removed to Hospital.
		Cases.	Deaths.		
1916	20,679	52	22	1·06	38
1917	17,906	33	16	0·89	21
1918	17,133	28	16	0·93	23
1919	18,694	55	20	1·07	37
1920	25,039	69	36	1·49	50
1921	21,904	60	34	1·55	50
1922	21,467	60	33	1·54	55

ROUTINE VISITS TO MIDWIVES.

Rule 25 laid down by the Central Midwives Board states as follows :—“ The Local Supervising Authority shall make arrangements “ to secure a proper inspection of the Register of cases, bag of “ appliances, etc., of every midwife practising in the district of such “ authority, and when thought necessary, an inspection of her place of “ residence, and an investigation of her mode of practice.”

For this purpose three fully trained Female Inspectors have been appointed, all of whom hold the certificate of the Central Midwives Board. During the year, 4,602 visits were paid to the homes of practising midwives for the purpose of inspection, and for special enquiries relating to their work.

The midwives of the City are, with very rare exceptions, fully trained women. They have for many years been encouraged by the Medical Officer of Health to form themselves into an Association, which, year by year, has become numerically stronger, and that Association embraces nearly all, if not quite all, of the midwives in the City. The great advantage of this is, that the midwives as a body are now closely linked up with sanitary administration, and they themselves, as well as their patients, derive considerable advantage from this. For example, they arrange for themselves special courses of instruction, at which they receive much help (from lectures and in other ways) from the gynaecologists of the City.

The adoption of the Notification of Births Act, which renders it obligatory on the part of the medical attendant or midwife, as well as the father of the child, to notify the occurrence of a birth, has been a very valuable aid to the working of the Midwives Act.

MATERNITY AND REST HOME.

In the early part of 1920 the Maternity and Rest Home which was provided and equipped by the Maternity and Child Welfare Sub-Committee, aided by the generosity of the American Red Cross Society and the Stanley Rogers Memorial Committee, was opened.

It consists of two wards, together with an emergency ward and an isolation ward, containing 15 beds in all. It is intended to provide accommodation for women whose physical condition or home circumstances make it very desirable that they should have rest and care before, during, or after their confinements. It has proved to be of immense benefit in this way, and has been very much appreciated by those who have been received into the Home.

PATIENTS ADMITTED.

					<u>1921.</u>	<u>1922.</u>
Ante-natal cases	...	...	...	...	33	41
Confinements	...	...	...	...	130	131
Post-natal cases (23—8 with infants)	...			...	31	15

OPHTHALMIA NEONATORUM.

INFLAMMATION OF THE EYES OF THE NEWLY-BORN.

The definition adopted for the purposes of dealing with this disease is the expression used in the Rules issued by the Central Midwives Board, governing the practice of midwives, namely (in the section relating to the child) "Inflammation of, or discharge from, the eyes, however slight." A considerable number of the cases enumerated below are extremely mild, but it is so difficult to draw a line between "slight inflammation" and definite Ophthalmia Neonatorum that it is considered advisable to include inflammation of all degrees of severity in the term "Ophthalmia Neonatorum."

The following figures give some details as to the sources of information and character of the cases dealt with during the year:—

The total number of cases brought to the notice of the department, 713.

(1) Reported by Doctors	...	...	...	...	42
(2) „ from Hospitals	...	...	...	...	30
(3) „ by Midwives	...	...	...	...	498
(4) Discovered by Inspectors	...	...	...	...	135
(5) Reported by Parents	...	...	...	...	8-713

The above consisted of:—

(1) Mild cases	...	...	...	...	549
(2) Severe cases	...	...	...	...	115
(3) Under private treatment	...	...	...	...	5-669
(4) Not Ophthalmia Neonatorum	...	...	...	...	44

Number treated in their own homes under special

nurse	...	...	...	...	465
„ attended at Hospital as out-patients	...	...	...	...	136
„ admitted into Hospital	...	...	...	...	63
„ treated by Doctors and Private Nurse	...	...	...	...	5-669

INTERVAL IN DAYS BETWEEN BIRTH AND ONSET OF DISEASE.

Days.	1	2	3	4	5	6	7	8	9	10 days and over.	Total.
Notified Cases during 1922	37	72	136	79	52	68	56	53	33	76	666

There were 3 cases in which no information was received.

Arrangements have been made with the City Bacteriologist to examine the discharge in every notified case of inflamed eyes in the newly-born. This enables a prompt verification of the disease to be determined.

No. of Notifications.	Cases from which Specimens were Examined by City Bacteriologist.	No. of Cases Positive Gonorrhoea.	Percentage to Total Cases Examined.	Percentage to Total Notification.
669	79	21	26.6	3.1

TABLE SHEWING INFECTION OF EYES AT ONSET.

Both Eyes.	Right Eye.	Left Eye.	Doubtful.	Total.
458	85	123	3	669

In the 85 cases where the right eye only was affected at onset the other eye became affected in 5 cases.

In the 123 cases where the left eye was affected at onset the other eye became affected in 4 cases.

The total number of visits and revisits paid in respect of the above cases was 6,057.

A very important part of the Scheme for dealing with this disease is the provision at St. Paul's Eye Hospital of 10 beds and cots for the

reception of infants with their mothers, where the former can be under the immediate care of Ophthalmic Surgeons and Nurses during the acute stage of the disease.

From the statistical table it will be seen that 63 babies were admitted with their mothers and the average stay in hospital was 25 days.

RESULTS.

Number of cases under treatment at 1/1/22	...	31	
„ „ „ notified during year 1922	...	669	
		—	700
Number of cases cured	... ..	634	
„ in which damage to sight resulted	...	7	
(see below)			
„ died during treatment	... ..	10	
„ under private treatment	... ..	5	
„ in Poor Law Institutions	... ..	1	
„ removed to other towns	... ..	1	
„ under treatment 31/12/22	... ..	42	
		—	700

Two cases in which the sight of both eyes was lost.

Two cases in which the sight of both eyes was seriously damaged.

Three cases in which the sight of one eye was lost and the other eye normal.

The results in these cases were chiefly due to congenital weakness in the infants or delay in bringing the disease under proper treatment.

INFANT WELFARE CENTRES AND MILK DEPOTS.

The total number of persons supplied with milk during the year was 13,510, viz., 3,636 on the books at the beginning of the year, and 9,874 admitted during the year. The following statement shows the different centres and the number supplied at each, viz. :—

Centres.	Ante-Natal.	Nursing Mothers.	Infants.	Liverpool Child Welfare Association.	Totals.
Netherfield Road ...	137	603	610	335	1,685
Earle Road ...	73	291	515	225	1,104
Park Road ...	190	463	697	354	1,704
Boaler Street ...	91	338	419	286	1,134
St. Anne Street ...	157	542	541	399	1,639
Rathbone Road ...	32	103	165	63	363
Mill Street ...	86	139	224	87	536
Agents ...	64	445	438	762	1,709
	830	2,924	3,609	2,511	9,874

The total quantity of milk supplied during the year was 168,396 $\frac{1}{4}$ gallons, and the bottles prepared reached a total of 888,995.

Total cases on Books, January 1st, 1922	...	...	...	3,636
„ „ admitted during 1922	...	...	...	9,874

Total supplied during 1922	13,510
----------------------------	-----	-----	-----	--------

Remaining on the books at the end of the year	...	4,248
---	-----	-------

Quarterly Average—January, February, March	...	3,633
„ „ April, May, June	...	3,436
„ „ July, August, September	...	3,451
„ „ October, November, December	...	4,085

The highest number being supplied with milk at one time was 4,279, during the week ending December 16th.

The number of attendances of infants at the Centres during the year for weighing and advice, etc., was 20,969.

The number of visits paid during the year to children in their own homes by the Inspectors attached to the Centres in order to see that the children were being properly fed and cared for was 4,526.

DRIED MILK.

The infants fed on dried milk during the year were 1,492, of whom 899 were admitted during the year.

The number remaining on the books at the end of the year was 574.

The quantity of dried milk used was 37,845 $\frac{3}{4}$ lbs.

HEALTH VISITORS.

The work of the Health Visitors continues on the same lines as in former years, and owing to the prevailing industrial and economic conditions, increasing spheres have been found for their usefulness.

Their duties are numerous, as a subsequent table will show, and, although the work is varied, it is primarily educational and preventive.

The City is divided into districts, to each of which certain Health Visitors are allocated. This arrangement facilitates the carrying out of the work.

The routine work of the Staff includes the following :—

Visiting under the Notification of Births Act.

Attendance at Clinics for expectant mothers and home visiting of these cases.

At the Ante-natal Clinics, cutting out, sewing and knitting classes are held to enable and encourage the mothers to make suitable provision for themselves and their expected infants. The classes are well attended by the mothers.

Attendance at Clinics for children from birth to five years of age, visiting of these children and instruction to mothers in their own homes.

Attendance at School Medical Inspections and following up in the home cases of physical defects and neglect found by the medical inspector.

Attendance at minor ailments clinics.

Attendance at Eye, Ear, Dental, Ringworm, Tonsils and Adenoids Clinics.

Visits to neglected and verminous school children and ensuring the cleansing of verminous children.

Visits to infectious school children (infectious skin diseases).

Care of cases referred from the various Voluntary Organisations,
e.g. :—

Child Welfare Association.

Police.

Prisoners of War Fund.

Relieving Officers.

Liverpool Society for Prevention of Cruelty to Children.

Personal Service Committee.

Society for the Care of the Mentally Deficient.

Re-visits to Phthisis cases amongst women and children.

Visits to cases and home nursing of Measles, Whooping Cough, Influenza, Pneumonia and Infantile Diarrhœa.

In addition to the duties enumerated above, the Health Visitors have given valuable assistance to the Housing Department in investigating the conditions of those applying for houses, so that the most pressing cases should receive priority.

Good work is still being done in co-operation with the Tuberculosis Department, by specially qualified Visitors, for discharged soldiers and sailors suffering from Tuberculosis, especially with reference to their housing, surroundings and treatment.

The visits paid to expectant mothers during the year were as follows :

First visits	... ..	3,602
Total visits	... ..	5,007
Attendances at Ante-Natal Clinics—New cases		4,350
Total number of attendances during the year		20,784

NOTIFICATION OF BIRTHS ACTS, 1907 AND 1913.

No. of Births notified during the year	...	19,589
No. of Births visited during the year	...	19,167
Percentage visited during the year ...	...	98
Re-visits of Births during the year ...	...	54,572

The following figures give the attendances, condition, and feeding of children on admission to those Post-Natal Clinics which are under the control of the Health Committee :—

INFANT CLINICS.

	<u>1921.</u>	<u>1922.</u>
Admissions for year	6,296	5,986
Age on admission—		
Under 1 month old	1,598	1,909
From 1 to 3 months old	2,338	2,211
From 3 to 6 months old	988	802
From 6 to 12 months old	604	507
Over 12 months old	768	557
Condition of Health on Admission—		
Good	4,235	3,836
Fair (under average)	1,377	1,498
Delicate	684	652
Method of Feeding on Admission—		
Breast fed entirely	3,662	3,766
Partly breast fed	667	580
Artificially fed entirely	1,967 — 2,634	1,640 — 2,220
Artificial Method adopted—		
Cows' Milk	313	324
Prepared or sterilized milk	121	135
Dried milk	1,033	748
Condensed milk	314	331
Patent foods	120	151
Ordinary foods	733 — 2,634	531 — 2,220
*Treatment given on admission—		
Advisory	1,923	1,800
Minor Medical	4,373	4,186
Referred to Medical Practitioners, Hospitals, etc.	291	273
Total attendances for year	73,851	85,928
Attendances under 1 year	58,952	64,550
Attendances from 1 to 3 years	13,637	18,275
Attendances from 3 to 5 years	1,260	3,103
Attendances of mothers at classes	6,822	4,063

There are additional Clinics organised by Voluntary Agencies, which carry on very valuable work on the same lines.

* The work of the Clinic is mainly preventive, only minor ailments being treated. Cases found to be suffering from any condition requiring further treatment are referred either to Private Practitioners, Hospitals or Dispensaries. In many cases the early diagnosis of ailments, with the necessary treatment, has given good results which could not otherwise have been obtained.

DAY AND RESIDENT NURSERIES.

In Liverpool there are eight Day Nurseries, seven of which are under the control of the Corporation, with accommodation for 390 children. Children from the age of 3 weeks to 5 years are admitted to the Day Nurseries between the hours of 7 a.m. and 7 p.m.

A daily charge is made for each child.

At certain of the Nurseries, children may be boarded for short periods to tide over special difficulties in the homes, such as illness of the mother, etc.

These Institutions are much appreciated by the working-class mothers in times of sickness, or when, by reason of widowhood or incapacity of their husbands, they are compelled to go out to work in order to make provision for themselves and their families.

The Nurseries provide a training school for Nursery nurses and an excellent preliminary training for girls wishing to train later as Hospital Nurses.

The children who attend are taught clean and orderly habits, and their diet, play and rest are carefully supervised.

The Day Nurseries are situated as follows :—

	Attendance.
1.—264, Westminster Road	7,485
2.—18, Gt. George Square	7,286
3.—407, Edge Lane (day and resident)	11,293
4.—141 and 143, Smithdown Lane (day and resident)	9,249
5.—Banks Road, Garston	6,566
6.—87, South Hill Road	7,389
7.—63, Everton Road	7,106
8.—61, Shaw Street	5,785

The total number of children admitted into the Resident Nursery at Elms House from January to December, 1922, was 79.

32 children were admitted because the mothers were expecting to be confined.

39 children were admitted because the mothers had been admitted into Hospitals or Convalescent Homes.

7 children were admitted because the mothers had been admitted into Sanatoria.

1 child was admitted because the mother was in an Asylum.

The average duration of stay in the Nursery was 40 days.

LIVERPOOL CORPORATION ACT, 1921.

REGISTRATION OF LYING-IN-HOMES.

The Liverpool Corporation Act, 1921, Part 28 (Lying-in-Homes), came into operation on 1st April, 1922.

During the year 1922, 60 applications were received by the Town Clerk. After careful investigation of the practice and premises 54 of these applications were approved by the Health Committee.

Number of Rooms registered in the 54 Homes containing	
145 beds 	110
Additional rooms registered in cases of emergency containing	
15 beds 	15
In 1 registered Lying-in-Home an additional bed was	
allowed in an emergency 	1
Number of Live Births which took place in the above homes	482
„ „ Still-Births „ „ „ ...	10
„ „ Legitimate Births „ „ „ ...	419
„ „ Illegitimate Births „ „ „ ...	73

The number of visits paid to the Lying-in Homes during the year was 242.

INFECTIOUS DISEASE IN SCHOOLS.

Measles, which had been very prevalent in December, 1921, continued to a lesser extent in January, 1922, and necessitated the closure of the Infants' Department of one school in Wavertree in that month. A school in St. Michael's was closed on that account in May, another in Walton in November, and one in Garston in December. It is in accordance with the experience of previous years that the outbreaks occurring in the intervals between major epidemics are confined to the outskirts of the town. In the Infants' Department of one school, 10 cases of measles occurred in one week in a single class; all children in this class who had not had the disease were excluded for ten days, and excepting those cases which developed in that period no further cases occurred. So limited an outbreak is, however, unusual.

The most severe outbreak of Influenza which has affected the city since 1918-19 occurred in January-February, 1922. Two neighbouring schools in Everton were rapidly involved, and were closed on January 25th and 27th. The disease was, however, widespread, and by January 31st the Infants' Departments of 18 other schools had been closed. The disease increased until the third week in February, in which week 520 deaths from all causes were recorded, of which 51 were definitely ascribed to Influenza, and 210 to other respiratory diseases. The mortality among children under 10 years of age was relatively higher than in the years 1918-19. By this time 67 schools were entirely closed, in 26 two or more departments were closed, and in a further 26 schools only the Infants' Department was closed.

On January 30th, the attention of the Cinematograph Exhibitors' Association was directed to the prevalence of influenza in epidemic form. This body subsequently held a meeting, and voluntarily agreed to exclude children under 10 years of age during the continuance of the epidemic. The Sunday Schools were also closed for a short period.

After the third week in February the outbreak rapidly declined.

The Infants' Department of one school was closed in May on account of the prevalence of Mumps. Two private schools were affected with Scarlet Fever, and in one case the school was voluntarily closed.

As in previous years, a number of schools were visited on account of the occurrence of cases of Diphtheria, and in cases where carriers were discovered these were excluded from school until certified by the City Bacteriologist as no longer harbouring the diphtheria bacillus.

PUBLIC ELEMENTARY SCHOOLS.

	<u>1922.</u>
Number of Visits to Schools	3,222
,, found incorrect	33
,, of Notices issued <i>re</i> defects	189

NOTICES TO SCHOOL TEACHERS

The arrangements have been continued with the Education Committee that notice shall be sent to the Education Department and postcards to the Head Teachers of the various schools informing them when children from infected houses attend their schools; 6,489 cards were sent during the year, as against 9,654 in the preceding year.

MEDICAL INSPECTION OF SCHOOLS.

The accompanying forms are used by the Assistant School Medical Officers for reporting the results of their inspection of children and of school premises. Each year a routine inspection of the children at certain ages is made and at the same time a re-inspection is made of any children who have revealed defects necessitating continued supervision (termed second re-inspection).

The first form is used for reporting on this inspection. A second form is used for any further visit made to the school to re-examine defective children.

The School Medical Officer when inspecting the children also examines the School premises in order to see if they are in a hygienic condition, Form 20 is brought up to date on these occasions. Appropriate action is taken if defects are found.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

Routine Inspection and Second Re-inspection of
 School, by Dr. during.....

* * * *

Previously visited

Notices to parents *re* previous visit sent

* * * *

Entrants }

No. of Routine Examinations Intermediates }

Leavers }

No. of cases of neglect discovered at routine examination

No. of children excluded

Special cases

.....

.....

* * * *

No. of children re-inspected for medical defects

No. of children re-inspected for neglect

* * * *

Notices *re* defects sent to parents

Miscellaneous

Defective Vision

Mouth Breathing

Tonsils and Adenoids

Deafness

Otorrhœa

Defective Teeth

Total

* * * *

No. of children who have
 been supplied with glasses :—

No of children not wearing Percentage of children
 their glasses :— supplied with glasses

Glasses broken who were wearing them :

Glasses lost per cent.

Other reasons

School Medical Officer's Remarks.

S. M. O.

MEDICAL RE-INSPECTION OF SCHOOL CHILDREN.

First re-inspection of School
by Dr. during

* * * *

Previously visited

Notices *re* previous visit sent

* * * *

No. of children re-inspected for medical defects

No. of children re-inspected for neglect

Notices *re* defects sent to parents

Miscellaneous	.....
Defective Vision	.....
Mouth breathing	.....
Tonsils and Adenoids	.....
Deafness	.....
Otorrhœa	.....
Defective Teeth	.....

No. of Children who have been supplied with Glasses

No. of Children not wearing their glasses :—

Glasses Lost	}
Glasses Broken	.....	
Other reasons	.....	

Percentage of Children supplied with glasses who were wearing
them per cent.

* * * *

School Medical Officer's Remarks.

S. M. O.

School Medical Officer's Inspection of School Premises etc.*School*

SURROUNDINGS

VENTILATION :—Type

Adequacy

LIGHTING :—(Suitability) Natural

Artificial

HEATING :—Type

Suitability

DESKS :—Types

Sizes

Position

BLACKBOARDS :—Suitability

BOOKS :—(re size of type)

DRINKING WATER

CLEANLINESS OF PREMISES

CLOAKROOMS :—Sufficiency

Heating

Cleanliness

LAVATORIES

ARRANGEMENTS FOR DRYING BOOTS AND CLOTHES

OFFICES :—Sufficiency

Condition

Cleanliness

General Remarks on the School in relation to health of children

.....*School Medical Officer.*.....*Date.*

BLIND PERSONS ACT, 1920.

The following is the Scheme, proposed by the City Council and approved by the Ministry of Health, for the administration of the Blind Persons Act, 1920, in the City of Liverpool :—

AREA.—The area to be covered for the purposes of the Scheme is the City and County Borough of Liverpool.

OBJECTS.—To provide as far as practicable for :—

- (a) Children under school age ;
- (b) Education and training of children and adults ;
- (c) Employment ;
- (d) Augmentation of earnings of adult blind ;
- (e) Unemployable blind ;
- (f) General social welfare ;
- (g) Registration.

CHILDREN.—Children under school age shall be referred to the Health Committee for visitation by the Health Visitors. They shall receive where possible or desirable, the benefit of Nursery School Treatment, and in cases of children between 2 and 5 years of age where the home conditions are unsatisfactory the Education Committee may arrange to remove children to a suitable home.

The Elementary Education of children between the ages of 5 and 16 years shall be undertaken by the Education Committee, who shall continue the existing arrangements for the education of such children at the following institutions, viz. :—

Wavertree School for the Blind,
 Liverpool Catholic Blind Asylum,
 Walmer School for Blind and Defective, Rhyl,

or at such other Institutions as they may consider desirable.

YOUNG PERSONS AND ADULTS.—The further education of blind persons above the age of 16 years, whether Secondary or Technical, shall be left to the Education Committee, who shall also arrange where necessary for the proper maintenance in residential Institutions or otherwise of students during their periods of training. This provision shall include persons who became blind in adult life and who are capable of receiving and being benefited by such education.

EMPLOYMENT AND AUGMENTATION OF EARNINGS.—Provision for the employment in workshops of trained persons over 21 years of age, and for the accommodation of such persons in Hostels as required, shall continue to be made by the Liverpool Workshops for the Blind, School for the Indigent Blind, and Catholic Blind Asylum, subject to the following conditions :—

(a) That any extension of the existing provision for the employment of blind persons so far as it affects this City be referred to the City Council for approval.

(b) That the said Institutions shall submit for the approval of the City Council a scale of augmentation of the wages of blind persons employed either in workshops or at their own homes.

(c) That such scale of augmentation shall include the proposed monetary relief in cases where wages and augmentation are insufficient for proper maintenance.

(d) That a scheme for the assistance of Home Workers shall be organised by the said Institutions in collaboration with the Home Teaching Society for the Outdoor Blind, which scheme shall be subject to the approval of the City Council.

UNEMPLOYABLE BLIND.—The care and maintenance in Homes or otherwise of destitute blind persons who are incapable of work shall remain in the hands of the West Derby Board of Guardians, the Liverpool Workshops for the Blind, the School for the Indigent Blind, and the Catholic Blind Asylum, but the work of such bodies and agencies shall be co-ordinated as hereinafter provided.

GENERAL SOCIAL WELFARE.—The services of Home Teaching, Visiting, and General Social Welfare shall be carried out by the Home Teaching Society for the Outdoor Blind, and such other Institutions as may be approved by the City Council, and such societies shall be requested to submit to the City Council any proposals for the extension of necessary welfare services.

REGISTRATION.—It shall be the duty of the City Council to provide and maintain a system of registration of blind persons with full records as required by the Ministry of Health.

ADMINISTRATION.—The duties of the City Council shall be administered by the Health Committee, who shall be assisted by two representatives appointed by each of the several Institutions in the City interested in the welfare of Blind persons, the League for the Blind, and the West Derby Board of Guardians.*

MISCELLANEOUS.—The City Council shall take such other steps as may be lawful for giving effect to the provisions of Section 2 of the Blind Persons Act, 1920.

* The present constitution of the Health Committee only allows one representative to be co-opted.

TUBERCULOSIS.

SANATORIA.

The following Institutions were utilised to accommodate cases of pulmonary and non-pulmonary tuberculosis during the year:—

SANATORIA:—Fazakerley, Highfield, Parkhill, Delamere, Delamere Training Colony, Leasowe, the West Kirby Children's Convalescent Home, the Ellen Gonner Home, Freshfield, and Thingwall Hall.

HOSPITALS:—The Royal Infirmary, the Royal Southern Hospital, the David Lewis Northern Hospital, the Stanley Hospital, the Royal Liverpool Children's Hospital, the Royal Liverpool Country Hospital, Heswall, and the Liverpool Chest Hospital.

Occasional use was made of a few outside Sanatoria when for some special reason treatment away from Liverpool appeared desirable. These outside Sanatoria included Daneswood, Bournemouth, Bramshott, Middleton-in-Wharfedale, Benenden, St. Luke's Home, Baschurch, Shaftesbury Road, Southport, Ventnor, Preston Hall, and Papworth.

The admissions to these outside Institutions during the whole year consisted of fourteen patients, a very small proportion of the 2,008 patients admitted for institutional treatment during the year.

The Fazakerley, Highfield and Parkhill Sanatoria are situated within the City boundary, and are equipped and administered by the Hospitals Committee. Their accommodation and staff at the end of the year were as follows:—

FAZAKERLEY SANATORIUM—Beds 311.

Medical Superintendent—Dr. C. Rundle.

Principal Resident Medical Officer—Dr. W. Crane.

Consulting Surgeon—Mr. J. T. Morrison.

Visiting Dental Surgeon—Dr. R. J. Erskine Young.

Three Assistant Resident Medical Officers.

Matron, Sisters, and Nursing Staff—65.

Normal allocation of beds.

	Observation.	Pulmonary Tuberculosis.		Non-Pulmonary Tuberculosis.		TOTAL.
		"Sanatorium" Cases	"Advanced" Cases	Disease of Bones and Joints.	Other Conditions	
Adult Males ...	6	67	37	15	15	140
Adult Females ...	4	45	15	10	3	77
Children under 15	6	51	4	15	18	94
TOTAL ...	16	163	56	40	36	311

HIGHFIELD SANATORIUM—Beds 320.

Medical Superintendent—Dr. H. R. MacIntyre.

Four Assistant Resident Medical Officers.

Matron, Sisters, and Nursing Staff—61.

Normal allocation of beds.

	Observation.	Pulmonary Tuberculosis.		Non-Pulmonary Tuberculosis.		TOTAL.
		"Sanatorium" Cases	"Advanced" Cases	Disease of Bones and Joints.	Other Conditions	
Adult Males ...	—	120	80	—	—	200
Adult Females ...	—	72	48	—	—	120
Children under 15	—	—	—	—	—	—
TOTAL ...	—	192	128	—	—	320

PARKHILL SANATORIUM—Beds 100.

Medical Superintendent—Dr. H. R. Macintyre.

One Assistant Resident Medical Officer.

One Assistant Resident Medical Officer (part time).

Matron, Sisters, and Nursing Staff—20.

Normal allocation of beds.

	Observation.	Pulmonary Tuberculosis.		Non-Pulmonary Tuberculosis.		TOTAL.
		"Sanatorium" Cases	"Advanced" Cases	Disease of Bones and Joints.	Other Conditions	
Adult Males ...	—	20	20	—	—	40
Adult Females ...	—	10	10	—	—	20
Children under 15...	—	30	10	—	—	40
TOTAL ...	—	60	40	—	—	100

The reduction in the accommodation of Parkhill Sanatorium from 225 beds to 100 beds, and the concurrent reduction of medical and nursing staff, was accomplished by June 30th.

The remaining Institutions named in the opening paragraphs are responsible for the balance of the beds in use, namely, 244. The normal total accommodation for tuberculosis consists of 975 beds, which are allocated in the following manner:—

TOTAL NUMBER OF BEDS NORMALLY AVAILABLE FOR PATIENTS.

	Observation.	Pulmonary Tuberculosis.		Non-Pulmonary Tuberculosis.		TOTAL.
		"Sanatorium" Cases.	"Advanced" Cases	Disease of Bones and Joints.	Other Conditions	
Adult Males ...	6	227	142	19	19	413
Adult Females ...	4	137	78	14	7	240
Children under 15...	6	115	14	130	57	322
TOTAL ...	16	479	234	163	83	975

The extent of Residential Treatment afforded during the year is shown in Table I.

TABLE I.

	In Institu- tions on Jan. 1st.	Admitted during the year.	Discharged during the year.	Died in the Institutions.	In Institu- tions on Dec. 31st.
NUMBER OF PATIENTS :—					
Adults—Male	459	917	756	219	401
Female... ..	202	488	411	80	199
Children*—Male	190	289	290	22	167
Female	176	314	258	39	193
TOTAL	1,027	2,008	1,715	360	960

* Under 15 years of age.

The immediate results of the treatment of patients discharged from Residential Institutions during the year is shown in Table II. The meanings of the terms used to describe the classification of patients suffering from tuberculosis, and the description of their condition, is in accordance with the suggestions of the Minister of Health in draft Memorandum 37/T, as follows:—

CLASSIFICATION OF PATIENTS SUFFERING FROM TUBERCULOSIS.

(I) All patients are grouped according to their sex and age; patients under 15 years of age are classed as children, and those above that age as adults.

(II) Patients are also classified according to the organs or parts affected, as follows:—

(a) Pulmonary Tuberculosis (including tuberculosis of the pleura and intra-thoracic glands).

(b) Non-pulmonary Tuberculosis.

Patients suffering from both pulmonary and non-pulmonary tuberculosis are classified as pulmonary cases.

(III) Patients suffering from pulmonary tuberculosis are divided into:—

Class A, viz., cases in which tubercle bacilli have never been demonstrated in the sputum.

Class B, viz., cases in which at any time tubercle bacilli have been found. This class is further sub-divided in three groups, as follows:—

Group 1.—Cases of slight constitutional disturbance, if any; *e.g.*, there is no marked acceleration of the pulse nor elevation of temperature except of a very transient duration; gastro-intestinal disturbance or emaciation, if present, is not excessive. The obvious physical signs are of a very limited extent, as follows:—Either present in one lobe only and, in the case of an apical lesion of one upper lobe, not extending below the second rib in front nor exceeding an equivalent area in any one lobe; or where these physical signs are present in more than one lobe, they are limited to the apices of the upper lobes and do not extend below the clavicle and the spine of the scapula. No complication (tuberculous or other) of prognostic gravity is present. A small area of dry pleurisy does not exclude a case from this group.

Group 3.—Cases with profound systemic disturbance or constitutional deterioration; with marked impairment of function, either local or general, and with little or no prospect of permanent improvement. All cases with grave

complications, whether tuberculous or not, are classified in this group, *e.g.*, diabetes, tuberculosis of larynx and intestine, etc.

Group 2.—All cases which cannot be placed in Groups 1 and 3.

(IV) Patients suffering from non-pulmonary tuberculosis are classified according to the site of the lesion, as follows:—

(1) Tuberculosis of bones and joints.

(2) Abdominal tuberculosis (*i.e.*, tuberculosis of peritoneum, intestines, or mesenteric glands).

(3) Tuberculosis of other organs.

(4) Tuberculosis of peripheral glands.

Patients suffering from multiple lesions are classified in one sub-group only, viz., in that applicable to the case which stands highest in the above Table.

RESULTS OF TREATMENT.

The following terms are used in Table II, and throughout this Report, to describe the results of treatment:—

“Disease Arrested”—Cases which have been “quiescent” for at least two years.

“Quiescent”—Cases which have no symptoms of tuberculosis and no signs of tuberculous disease, except such as are compatible with a completely healed lesion, and in which sputum, if present, is free from tubercle bacilli.

“Much Improved”—Cases short of “quiescent” in which (1) the general health is good; (2) working capacity is more or less restored; and (3) the symptoms of tuberculosis are materially diminished, and there is no extension of the physical signs.

“No Material Improvement”—All other patients who are alive.

TABLE II.

Return showing the immediate results of treatment of patients discharged from Residential Institutions during the year:—

Classification on Admission to the Institution and Condition at time of Discharge.	DURATION OF RESIDENTIAL TREATMENT.												TOTAL
	Under 3 months.			3—6 months.			6—12 months.			More than 12 months.			
	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	
PULMONARY TUBERCULOSIS :—													
Class A.—													
Quiescent	19	9	36	16	19	35	12	5	27	4	7	33	222
Much improved	41	18	11	66	30	14	18	15	13	5	3	15	249
No material improvement	52	38	27	26	7	2	11	5	3	3	4	2	180
Died in Institution	16	4	12	3	1	2	7	—	2	3	—	—	50
Class B, Group 1—													
Quiescent	5	1	—	5	4	1	3	—	—	—	1	—	20
Much improved	16	5	—	26	7	1	12	7	—	9	1	1	85
No material improvement	26	19	—	16	8	2	1	2	—	1	—	1	76
Died in Institution	14	4	1	1	2	—	—	—	—	—	—	—	22
Class B, Group 2—													
Quiescent	1	1	—	6	4	—	9	2	—	1	—	1	25
Much improved	18	7	—	32	6	—	13	5	1	4	—	1	87
No material improvement	39	33	2	30	12	—	12	8	1	4	5	—	146
Died in Institution	20	4	1	3	2	—	—	—	—	1	—	1	32
Class B, Group 3—													
Quiescent	—	—	—	—	1	—	—	—	—	1	—	—	2
Much improved	4	1	—	11	2	—	12	1	1	—	—	—	32
No material improvement	36	26	2	24	12	—	24	12	—	7	2	1	146
Died in Institution	85	39	5	31	10	2	12	9	1	15	3	1	213
NON-PULMONARY TUBERCULOSIS :													
Bones and Joints—													
Quiescent	1	—	—	1	2	5	—	2	11	1	—	37	60
Much improved	11	5	21	1	1	3	1	—	2	—	1	3	49
No material improvement	2	2	8	1	—	2	1	—	2	—	1	3	22
Died in Institution	1	—	2	1	—	1	—	—	—	2	1	1	9
Abdominal—													
Quiescent	1	3	20	—	—	10	1	1	10	1	—	5	52
Much improved	3	6	16	—	1	5	1	—	2	—	—	1	35
No material improvement	1	3	22	—	—	2	—	—	—	—	—	1	29
Died in Institution	—	—	9	—	1	—	—	—	1	—	—	—	11
Other Organs—													
Quiescent	1	—	—	—	—	1	—	—	—	—	—	—	2
Much improved	3	1	2	1	—	1	—	—	—	—	1	1	10
No material improvement	3	—	4	1	—	—	—	—	—	—	—	—	8
Died in Institution	3	—	17	—	—	—	—	—	—	—	—	—	20
Peripheral Glands—													
Quiescent	2	1	15	—	—	11	—	—	6	—	1	3	39
Much improved	12	18	43	2	—	7	2	1	3	—	—	1	89
No material improvement	3	—	8	—	1	1	—	—	—	—	—	—	13
Died in Institution	—	—	2	1	—	—	—	—	—	—	—	—	3
Observation for purpose of Diagnosis.													
	Under 1 week.			1—2 weeks.			2—4 weeks.			More than 4 weeks.			
Tuberculous*	—	2	—	2	—	1	2	2	—	3	1	—	37
Non-Tuberculous	2	—	—	4	—	6	7	1	2	4	3	8	
Doubtful	—	—	—	—	—	—	—	—	—	—	—	—	
TOTAL													2,075

* Included in figures above.

THE DELAMERE TRAINING COLONY.

This Training Colony, which was opened in September, 1920, is reserved for the treatment and training of ex-service patients suffering from pulmonary tuberculosis. It is approved by the Minister of Health, both for concurrent treatment and training and for vocational training under the terms of Circular 307. At the end of the year 60 occupied beds were shared by Liverpool, Lancashire and Cheshire. The industries represented are watch and clock repairing, house repairs, market gardening, and pig and poultry farming. Whilst there are a certain proportion of failures, mainly due to the unsuitability of the candidates, a number of men have been turned out after twelve months' training well fitted to compete in the open market in their respective trades. The patients tend to favour training in watch and clock repairs, house repairs, and rural carpentry.

LEASOWE SANATORIUM.

This Institution is situated in the Wirral Peninsula, by the edge of the sea, and affords accommodation for children suffering from non-pulmonary tuberculosis. It is administered by the Liverpool Child Welfare Association, and 145 beds are allocated to Liverpool cases.

The following table of work during 1922, and reports relating thereto, have been kindly furnished by the Senior Medical Officer, Dr. T. Hartley Martin, and indicate the scope and results of the work carried out:—

LIVERPOOL CASES DISCHARGED FROM LEASOWE SANATORIUM
DURING 1922.

Lesion.	Total Discharged.	Non-Tuberculous.	Tuberculous.	CONDITION ON DISCHARGE.						Average Duration of stay in days.	Percentage discharged — Disease Quiescent.
				Disease Quiescent.	Improved.	No material Improvement.	Died.	Transferred to other Institutions.	Removed by Parents.		
Tuberculosis of the Spine ...	18	3	15	10	—	2	—	—	3	545	66%
Tuberculosis of the Hip ...	9	1	8	8	—	—	—	—	—	684	100%
Tuberculosis of the Knee ...	9	—	9	7	—	—	1	1	—	491	77%
Tuberculous Osteitis...	24	1	23	22	—	—	1	—	—	518	82%
Tuberculous Adenitis ...	18	—	18	16	—	—	—	1	1	260	88%
Tuberculous Peritonitis ...	19	3	16	14	—	1	—	—	1	231	87%
Lupus	1	—	1	—	—	—	—	—	1	174	—
TOTALS	98	8	90	77	—	3	2	2	6	—	—
Percentages	—	—	90	77	85.5% of all cases treated.						
Percentages of cases treated to completion ...	—	—	84	77	93.9% of cases treated to completion						

The percentage figure of cases with quiescent disease upon discharge compares favourably with that of 1919, 1920 and 1921, and is considerably higher than that showing the same result achieved from all the cases in hospital. This is undoubtedly the result of the close co-operation which exists between the Liverpool Tuberculosis Officers and the Hospital by means of which cases are admitted as soon as they are diagnosed, and doubtful cases are admitted for observation and diagnosis.

The after-history of all Liverpool cases discharged from Leasowe is one of the first cares of the Liverpool Tuberculosis Officers, and the following table is of interest:—

Condition when discharged during 1919, 1920 and 1921.	CONDITION IN DECEMBER, 1922.					
	Fit.	Recurred and Re-admitted.	Disease Progressing.	Re-admitted for Deformities.	Died.	Not Traced.
Disease quiescent 260	228	13	—	3	5	11
Improved 1	—	—	1	—	—	—
No material improvement ... 15	1	—	4	—	10	—
Died... .. 21	—	—	—	—	—	—
Transferred to other Hospitals ... 13	8	—	2	—	3	—
Removed by parents 13	10	1	2	—	—	—
TOTALS 323	247	14	9	3	18	11

Certain figures in this table are of special interest. Of the five deaths among cases which were discharged “disease quiescent,” two were from phthisis, one from relapsed non-pulmonary lesion, and one from a non-tuberculous cause. In all except one of these cases the non-pulmonary lesion remained quiescent, and, as four other non-pulmonary cases whose lesion is quiescent have doubtful phthisis also, it would appear that the question of the possibility of the re-infection of these cases from their environment is of considerable moment.

Of the thirteen cases in whom the disease recurred, necessitating re-admission, the majority showed signs of relapse within twelve months of discharge. Bearing this in mind, it is reasonable to assume that 149 (87 per cent.) of the 170 patients whose disease was quiescent when discharged during 1919 and 1920, can now be classified under the heading “disease arrested.”

At a Social Re-union of patients, held recently at Leasowe, the question of the physical fitness of the above cases as a group was reviewed. It was found that 75 per cent. were physically fit for work, but that a third of them were unable for physical reasons to commend themselves to an employer. This fact, taken in conjunction with the liability of these cases to relapse in poor environment, raises again the question as to the necessity for providing After-Care or Extension Schools for this type of case, so that they can be taught some skilled trade or specialised occupation which will endow them with a greater labour value.

THE SANATORIUM WAITING LIST.

The number of patients waiting to enter a sanatorium at the end of each quarter from 1914 to 1922 is given in Table III. :—

TABLE III.

	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
March 31st ...	—	243	330	361	302	†441	77	264	17
June 30th	—	291	253	442	425	328	131	325	58
September 30th *198		389	398	422	430	140	173	171	45
December 31st	221	335	389	265	549	163	190	47	65

* The surrender of the accommodation at Fazakerley to the Military Authority.

† The acquisition of Fazakerley Sanatorium from the Military Authority.

In May, 1921, the Hospitals Committee acquired the use of the Highfield Sanatorium with accommodation for 320 patients.

Between March and June, 1922, the Parkhill Sanatorium accommodation was reduced from 225 beds to 100 beds.

TUBERCULOSIS INSTITUTES AND DISPENSARY SYSTEM.

The details relating to the Staff of the three Tuberculosis Institutes are to be found in the 1921 Annual Report. They remain unaltered except for a reduction in the clerical staff.

A statistical summary of the work of the Institutes in relation to diagnosis is given in Table IV. It is noteworthy that 2,985 new patients were examined during the year, an increase of 12 per cent. over the previous highest year. Of these patients 1,105 were judged to be suffering from a disability which was not tuberculous in nature, and no treatment at the public expense was granted in those cases. This rejection rate of 37 per cent. is a measure of the protection of the sanatorium accommodation from misuse.

TABLE IV.

Number of	' Under observa- tion pending diagnosis on Jan. 1st.	Applying for the first 1/2 time during the year.	TOTAL.	Found to be		Not suffering from Tuber- culosis.	Under observa- tion pending diagnosis on Dec. 31st	Cea atter bel comp (diag
				Suffering from Tuberculosis.				
				Pul- monary	Non pul- monary			
(a) All persons (in- cluding "Contacts")— Adults—Males ...	20	1,136	1,156	626	69	409	22	3
Female ...	18	824	842	481	66	246	23	2
*Children—Male ...	19	505	524	122	131	239	17	1
Female	17	520	537	158	138	211	15	1
TOTAL	74	2,985	3,059	1,387	404	1,105	77	8
(b) "Contacts " (included in (a)) Adults—Male ...	—	—	6	—	—	6	—	—
Female ...	—	—	12	2	—	10	—	—
*Children—Male ...	—	—	42	9	1	32	—	—
Female	—	—	28	8	2	18	—	—
(c) Insured persons (included in (a)) Male... ...	17	881	898	476	26	350	20	2
Female ...	8	306	314	187	10	98	11	—

* Under 15 years of age.

DIAGNOSIS.

The chief aids to diagnosis in doubtful cases are:—

- (a) Examination by X-ray.
- (b) Continued observation whilst following an ordinary occupation.
- (c) The repeated examination of the sputum.
- (d) A period of observation in hospital, if necessary.

These safeguards appear to be satisfactory in practice. During the year it was found necessary to admit for a period of observation 50 patients, of whom 13 were ultimately considered tuberculous and 37 were considered non-tuberculous. The fact that out of 2,008 admissions to sanatoria and hospitals only 37 patients were considered to be non-tuberculous, is an indication that diagnostic difficulties have been satisfactorily overcome. Upon the negative side of the diagnosis question it is still uncommon to find old rejected cases returning to the Tuberculosis Officers with undoubted disease of a tuberculous nature.

References of new cases from sources other than under the Notification Act continue to grow in number, and add very materially to the total of new cases examined.

A statistical return showing in summary form the condition of all patients whose case records are in the possession of the Tuberculosis Institutes at the end of the year, arranged according to the years in which the patients first came under public medical treatment, and according to their classification, is given in two tables below, Table V relating to pulmonary cases and Table VI to non-pulmonary cases.

TABLE V.—PULMONARY.

The condition of patients whose case records are in the possession of the Tuberculosis Institutes:—

Condition at the time of the last record made during the year to which the Return relates.		CASES ARISING PREVIOUS TO 1922.				CASES ARISING IN 1922.				
		Class A	CLASS B			Class A	CLASS B.			Total Class B
			Group 1	Group 2	Group 3		Group 1	Group 2	Group 3	
ALIVE.	CONDITION IN 1922 :—									
	{ Disease arrested									
	Adults—Male ...	48	1	—	—	1	—	—	—	—
	Female...	95	—	—	—	—	—	—	—	—
	Children—Male ...	26	—	—	—	—	—	—	—	—
	Female.	31	—	—	—	—	—	—	—	—
	{ Disease not Arrested									
	Adults—Male ...	583	90	169	66	325	234	109	90	27
	Female	304	235	57	32	324	223	71	66	15
	Children—Male ...	140	—	2	—	2	101	3	1	—
	Female	134	3	1	2	6	129	2	2	4
Dead :—										
	Adults—Male... ...	30*	16	37	174	227*	27	20	38	77
	Female ...	16*	7	14	120	141*	19	16	17	52
	Children—Male ...	5*	—	2	4	6*	14	1	—	2
	Female ...	4*	—	—	5	5*	13	2	—	5
Lost Sight of :—										
	Adults—Male... ...	30	3	4	1	8	—	2	2	—
	Female ...	19	2	3	1	6	1	1	—	—
	Children—Male ...	1	—	—	—	—	—	—	—	—
	Female ...	2	—	—	—	—	1	—	—	—
	TOTAL...	1,468	357	289	405	1,051	762	227	216	182

* Deaths occurring on and after January 1st, 1922, only.

TABLE VI.—NON-PULMONARY.

The condition of patients whose case records are in the possession of the Tuberculosis Institutes:—

Condition at the time the last record made during the year in which the Return relates.	CASES ARISING PREVIOUS TO 1922.					CASES ARISING IN 1922.				
	Bones and Joints	Abdominal	Other Organs	Peripheral Glands	TOTAL.	Bones and Joints	Abdominal	Other Organs	Peripheral Glands	TOTAL.
CONDITION IN 1922 :—										
Disease Arrested										
Adults—Male ...	1	—	—	2	3	—	—	—	—	—
Female...	2	1	—	4	7	—	—	—	—	—
Children—Male ...	2	1	—	3	6	—	—	—	—	—
Female ...	2	4	—	6	12	—	—	—	—	—
Disease not Arrested										
Adults—Male ...	29	4	8	15	56	25	3	13	20	61
Female	28	8	—	28	64	20	8	1	35	64
Children—Male ...	34	30	5	38	107	34	35	5	47	121
Female	23	34	5	41	103	33	18	7	57	115
and :—										
Adults—Male... ...	7	1	1	1	10*	1	2	3	1	7
Female ...	4	1	3	—	8*	—	1	—	1	2
Children—Male ...	—	2	2	—	4*	2	6	2	—	10
Female ...	1	1	1	—	3*	1	7	14	1	23
Sight of :—										
Adults—Male... ...	1	—	—	1	2	—	—	1	—	1
Female ...	—	—	1	1	2	—	—	—	—	—
Children—Male ...	—	—	—	1	1	—	—	—	—	—
Female ...	—	—	—	—	—	—	—	—	—	—
TOTAL	134	87	26	141	388	116	80	46	162	404

* Death occurring on and after January 1st, 1922, only.

It is noteworthy that of 1,387 new pulmonary cases accepted during the year, 762 (55 per cent.) possessed either no sputum or a negative sputum, and that 625 cases (45 per cent.) tubercle bacilli were demonstrated in the sputum. Of the total cases, those in Class B2 and B3 may be regarded as cases in a very seriously advanced stage of

disease, and their number was 29 per cent. of the whole. It is also noteworthy that of the new cases arising during the year, 230 (16 per cent.) were deceased before the year terminated.

Unless the Tuberculosis Officers are given an opportunity of reaching these cases at an earlier stage of illness, there is little hope of providing efficacious treatment.

A statistical summary of the work of the Tuberculosis Institutes relating to dispensary treatment and general supervision, inclusive of "domiciliary" cases, is given in Table VII, and at the foot thereof are included a few statistics of a general nature.

TABLE VII.

DISPENSARY TREATMENT AND GENERAL SUPERVISION (INCLUDING "DOMICILIARY" CASES)

Number of Patients.	PULMONARY				NON-PULMONARY			
	Adults		Children*		Adults		Children	
	M.	F.	M.	F.	M.	F.	M.	F.
Under Treatment or Supervision on Jan. 1st	1,534	989	245	245	88	127	100	
Coming for the first time under Public Medical Treatment...	626	481	122	158	69	66	131	
Resuming Public Medical Treatment	54	32	2	6	4	4	7	
Transferred from Residential Treatment or from other areas ...	681	355	112	123	58	51	162	
TOTAL (1) ...	2,895	1,857	481	532	219	248	400	
Discharged as no longer requiring either Treatment or Supervision...	49	95	26	31	3	7	6	
Transferred to Residential Treatment or to other areas ...	840	434	120	143	77	54	169	
Leaving Public Medical Treatment	89	79	10	21	4	21	10	
Lost sight of ...	42	27	1	3	3	2	1	
Died ...	208	182	14	16	9	8	2	
Remaining under Treatment or Supervision on Dec. 31st ...	1,667	1,040	310	318	123	156	212	
TOTAL (2) ...	2,895	1,857	481	532	219	248	400	
1. Number of persons placed during the year under observation for the purpose of Diagnosis ...	2,895				6. Number of Visits paid by Nurses or Health Visitors to the Homes of Patients for Dispensary purposes ...	5,500		
2. Number of cases in which the period of observation exceeded two months ...	Nil				7. Number of Attendances of Patients at the Dispensaries ...	Insured 6,200 Uninsured 5,600		
3. Number of Consultations with Medical Practitioners at the Homes of the Patients (insured) ...	1				8. Number of Patients under Domiciliary Treatment at the end of the year	3,100		
4. Number of Consultations with Medical Practitioners at the Homes of the Patients (uninsured) ...	7				9. Number of Reports received in respect of Patients under Domiciliary Treatment ...	7,200		
5. Number of other Visits paid by Tuberculosis Officers to the Homes of Patients ...	721				10. Number of Specimens of Sputum examined in connection with the work of the Dispensaries ...	4,000		

* Under 15 years of age.

DOMICILIARY TREATMENT.

This form of treatment is arranged by the Tuberculosis Officers in such cases as have been examined by them, and in which it is considered to be the most appropriate form of treatment. Co-operation between the Medical Practitioners and the Tuberculosis Officers is secured in every case by means of a quarterly report from the Practitioners. At the end of the year, 3,142 cases remained under domiciliary treatment.

NURSING AND EXTRA NOURISHMENT.

The domiciliary nursing of both pulmonary and non-pulmonary cases is carried out by the Liverpool Queen Victoria District Nursing Association, with whom the Liverpool Hospitals Committee have an agreement, and to whom they make a grant-in-aid. During the year, 138 pulmonary and 129 non-pulmonary cases were nursed in their houses, and to these cases 12,017 visits were paid.

Extra nourishment was granted by the Tuberculosis Officers to patients who needed it as a part of their treatment and were unable to afford to purchase it for themselves. The nature of the extra nourishment granted, the conditions of a free grant, the terms of renewal and the facilities for supply, are described in the Annual Report for 1921, and remain unaltered.

At the end of the year 235 patients were in receipt of extra nourishment, involving the daily provision of 258 pints of milk and 49 eggs. The corresponding figure at the end of 1921 was 206 patients.

AFTER-CARE.

The after-care arrangements in force are as follows:—

- (1) The periodic examination by the Tuberculosis Officers of all cases under Public Medical Treatment.
- (2) Visits paid to patients in their homes by the Nurses attached to the Tuberculosis Institutes, and by the Health Visitors and Sanitary Inspectors employed by the Health Committee.

(3) Visits paid to patients in their homes by the Nurses of the Queen Victoria District Nursing Association.

(4) The reference of cases presenting peculiar difficulties to voluntary associations, such as the Child Welfare Association, the Personal Service Society, and the Central Relief Society, etc.

During the year the Tuberculosis Nurses attached to the Tuberculosis Institutes made 5,531 home visits. The Health Visitors and Sanitary Inspectors made 15,163 home visits. All these visits are the subject of report to the Medical Officer of Health. The home visits of the Queen Victoria District Nursing Association, to the number of 12,017, have already been referred to.

CO-OPERATION AND CO-ORDINATION.

The activities of the Tuberculosis Institutes are now so well known that new or suspected cases of tuberculosis are referred for examination and treatment from many sources.

The most important source of reference is the medical profession. It is the practice of the Tuberculosis Officers to give every notified case an opportunity of attending for examination with a view to Public Medical Treatment, and it is encouraging to note that only in occasional cases do patients refuse to be examined. Once patients have been examined they are kept under observation until the disease is arrested or they are deceased, have left Liverpool or cannot be traced. The category of not-traced cases is a small one inasmuch as every effort is made to trace cases temporarily lost sight of through change of address. Patients leaving Liverpool are notified to the Medical Officer of Health of the district in which they have gone to reside, and with each notification is sent a report as to their condition, treatment, and fitness or otherwise for employment.

The co-operation between the Ministry of Pensions and the Tuberculosis Officers is maintained, and during the year 2,811 medical reports were completed in reference to tuberculous pensioners.

The group of Institutions comprising Leasowe, West Kirby Convalescent Home, and the Ellen Gonner Home, are administered by the Child Welfare Association. Close co-operation between this Association and the Tuberculosis Department is maintained. In every case discharged from these Institutions a full report upon discharge is rendered, which is of use to the Tuberculosis Officers in their work of continued supervision. This Association is, moreover, in touch with a large number of children attending the out-patient departments of the various general hospitals, a circumstance which enables them to refer cases to the Tuberculosis Officers when action by the Public Health Department is called for.

Arrangements are in force between the Department and the general hospitals which have been approved for the treatment of tuberculosis by the Minister of Health, namely, the Royal Infirmary, the Royal Southern Hospital, the David Lewis Northern Hospital, the Stanley Hospital, and the Royal Liverpool Children's Hospital, whereby the latter accept for treatment surgical cases and emergency pulmonary cases of tuberculosis at the expense of the Local Authority. It is a condition of payment that (1) prompt notification of admission for treatment be received; (2) the Tuberculosis Officer shall have access to the case when under treatment should he so desire; (3) a full report is rendered upon discharge as to the treatment afforded, the result thereof, and the condition of the patient upon discharge. These arrangements work smoothly and are not abused, and valuable work is in progress.

Co-operation between the Tuberculosis Officers and the School Medical Officers is secured inasmuch as all definite and suspected cases discovered by the School Medical Officer are referred by the latter to the Tuberculosis Officer for examination, treatment and report. It is also the practice of the Tuberculosis Officers to report to the School Medical Officers their findings in any patient of school age examined. These cross references are very numerous, and during the year the Tuberculosis Officers rendered 1,740 reports to the School Medical Department.

DEATHS FROM PULMONARY TUBERCULOSIS.

The number of deaths from pulmonary tuberculosis in Liverpool from 1871 to 1922, together with the number of new cases notified, and the death rate which prevailed in England and Wales is given in Table VIII.

TABLE VIII.

DEATHS FROM* PULMONARY TUBERCULOSIS.

Years.	Cases notified.	Number of deaths.	Death Rate per 1,000 Liverpool.	Death Rate per 1,000 England and Wales.
1871 to 1880	Average yearly figures	Nil	1,506	2.90
1881 to 1890		Nil	1,260	2.35
1891 to 1900		Nil	1,171	1.92
1901 to 1910		2,216*	1,233	1.68
1911.....	2,284†	1,215	1.62	1.03
1912.....	3,611‡	1,113	1.48	0.99
1913.....	3,462	1,183	1.55	0.96
1914.....	2,785	1,132	1.46	0.99
1915.....	2,169	1,299	1.66	1.16
1916.....	2,526	1,254	1.59	1.23
1917.....	3,778	1,357	1.71	1.38
1918.....	3,204	1,400	1.75	1.52
1919.....	2,100	1,089	1.35	0.95
1920.....	2,203	1,102	1.36	0.84
1921.....	2,164	1,048	1.28	0.85
1922.....	2,078	1,086	1.32	—

* Voluntary notification as from 14.2.1901.

† 1911 was the last year of voluntary notification.

‡ From 1912 onwards Pulmonary Tuberculosis was compulsorily notifiable.

In Table IX a similar return is made in respect of deaths, etc., from non-pulmonary tuberculosis.

TABLE IX.

DEATHS FROM NON-PULMONARY TUBERCULOSIS.

Years.	Cases notified.	Number of deaths.	Death Rate per 1,000 Liverpool.	Death Rate per 1,000 England and Wales.	
1871 to 1880	Average yearly figures	Nil	481	·90	·65
1881 to 1890		Nil	527	·98	·64
1891 to 1900		Nil	500	·82	·61
1901 to 1910		100*	416	·56	·49
1911.....	232†	378	·50	·42	
1912.....	—	312	·41	·36	
1913.....	1,303‡	390	·51	·38	
1914.....	1,003	376	·48	·35	
1915.....	825	367	·47	·39	
1916.....	641	382	·48	·39	
1917.....	639	400	·50	·42	
1918.....	802	391	·49	·40	
1919.....	507	249	·31	·31	
1920.....	495	250	·31	·28	
1921.....	595	294	·36	·27	
1922.....	553	240	·29	—	

* Voluntary notification as from 14.2.1901.

† 1911 was the last year of voluntary notification.

‡ From 1913 onwards Non-Pulmonary Tuberculosis was compulsorily notifiable.

A comparison between the total deaths from pulmonary tuberculosis, the death rate, the total cases notified, and the number of notifications per 100 deaths in the case of Liverpool and other towns, is given in Table X.

TABLE X.
PULMONARY TUBERCULOSIS IN OTHER AREAS IN 1921.

	Number of notified cases.	Number of deaths.	Death Rate per 1,000.	Number of notified cases per 100 deaths.
Manchester	1,611	967	1·30	166
LIVERPOOL	2,164	1,048	1·28	206
Newcastle-upon-Tyne	532	347	1·25	153
Leeds	867	519	1·11	167
Sheffield	1,139	500	1·00	228
Birmingham	1,969	890	·97	221
Bradford	363	268	·92	136
Bristol... ..	911	358	·91	256

A similar return relating to non-pulmonary tuberculosis is given in Table XI.

TABLE XI.
NON-PULMONARY TUBERCULOSIS IN OTHER AREAS IN 1921.

	Number of notified cases.	Number of deaths.	Death Rate per 1,000	Number of notified cases per 100 deaths.
Newcastle-upon-Tyne	245	128	·37	191
LIVERPOOL	595	294	·36	239
Manchester	545	252	·34	216
Leeds	234	122	·26	191
Sheffield	254	119	·24	213
Bradford	93	71	·24	131
Birmingham	278	145	·16	191
Bristol... ..	188	54	·14	348

The number of deaths from Phthisis during the year was 1,086. The number of deaths during each of the preceding ten years, 1911-1920, has been as follows :—1,189, 1,183, 1,132, 1,299, 1,254, 1,357, 1,400, 1,089, 1,102 and 1,048.

DISTRICTS.	QUARTERS.								YEAR 1922.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland... ..	16	11	8	16	9	9	11	6	44	42	86
Exchange	19	16	18	4	9	7	7	9	53	36	89
Abercromby	16	8	14	3	14	5	7	7	51	23	74
Everton	36	20	38	24	13	18	21	12	108	74	182
Kirkdale... ..	11	12	21	13	13	9	15	10	60	44	104
West Derby (West)	32	17	18	15	20	7	18	11	88	50	138
Toxteth	29	21	21	12	14	9	13	8	77	50	127
Walton	11	12	11	12	10	7	13	8	45	39	84
West Derby (East)	13	12	16	7	14	10	9	10	52	39	91
Wavertree	5	6	8	5	3	3	9	4	25	18	43
Toxteth (East)	3	5	2	2	1	3	4	2	10	12	22
Garston	6	6	3	5	1	3	2	2	12	16	28
Fazakerley ... ..	...	4	3	1	2	1	1	1	6	7	13
Woolton ... ..	...	...	...	1	2	1	...	1	2	3	5
City	197	150	181	120	125	92	130	91	633	453	1,086

AGES AT DEATH.

Under 1 year.	1—	2—	5—	10—	15—	20—	30—	40—	50—	60 & up-wards.	All Ages.
5	12	21	17	34	104	244	225	243	124	57	1,086

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

NON-PULMONARY TUBERCULOSIS.

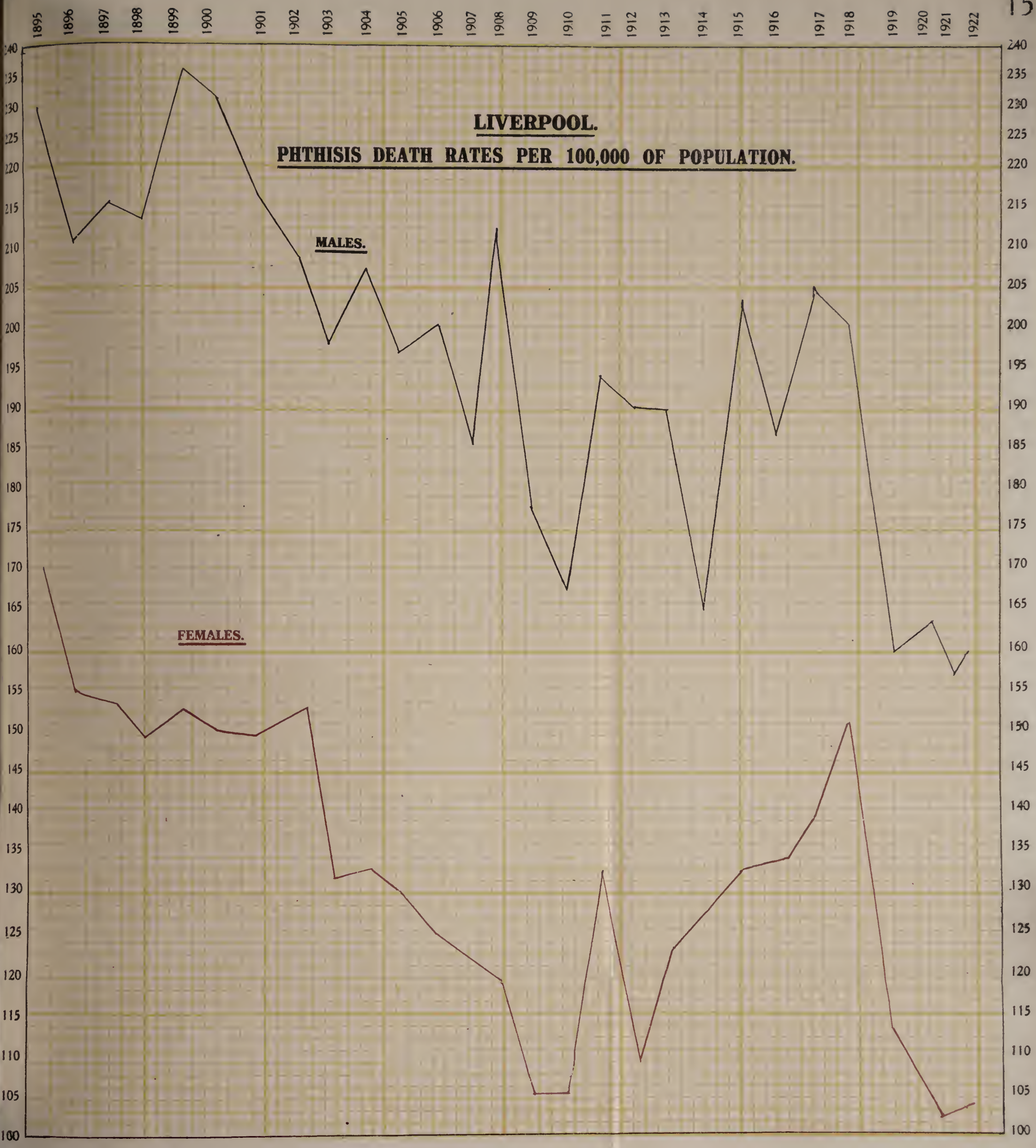
532 cases of non-pulmonary tuberculosis were notified during 1922. These were distributed as follows:—

			Cases.	Rate per 10,000.	Average for two years.
Scotland	...	...	29	6.3	7.5
Exchange	...	...	41	11.8	13.0
Abercromby	...	...	21	4.5	8.5
Everton	...	...	90	7.0	7.7
Kirkdale	...	...	53	7.4	8.4
West Derby, West	...	...	79	8.4	7.8
Toxteth	...	...	56	5.0	8.3
Walton	...	...	53	6.2	5.5
West Derby, East	...	...	44	5.5	5.4
Wavertree	...	...	30	6.6	5.2
Sefton Park	...	...	13	3.7	3.7
Garston	...	...	15	5.1	3.4
Fazakerley	...	...	1	1.7	3.4
Woolton	...	...	5	5.2	—
Address not known	...	...	2	—	—
Whole City	...	...	532	6.5	6.9

The high rate in Exchange is in part attributable to the numbers of common lodging houses in that district.

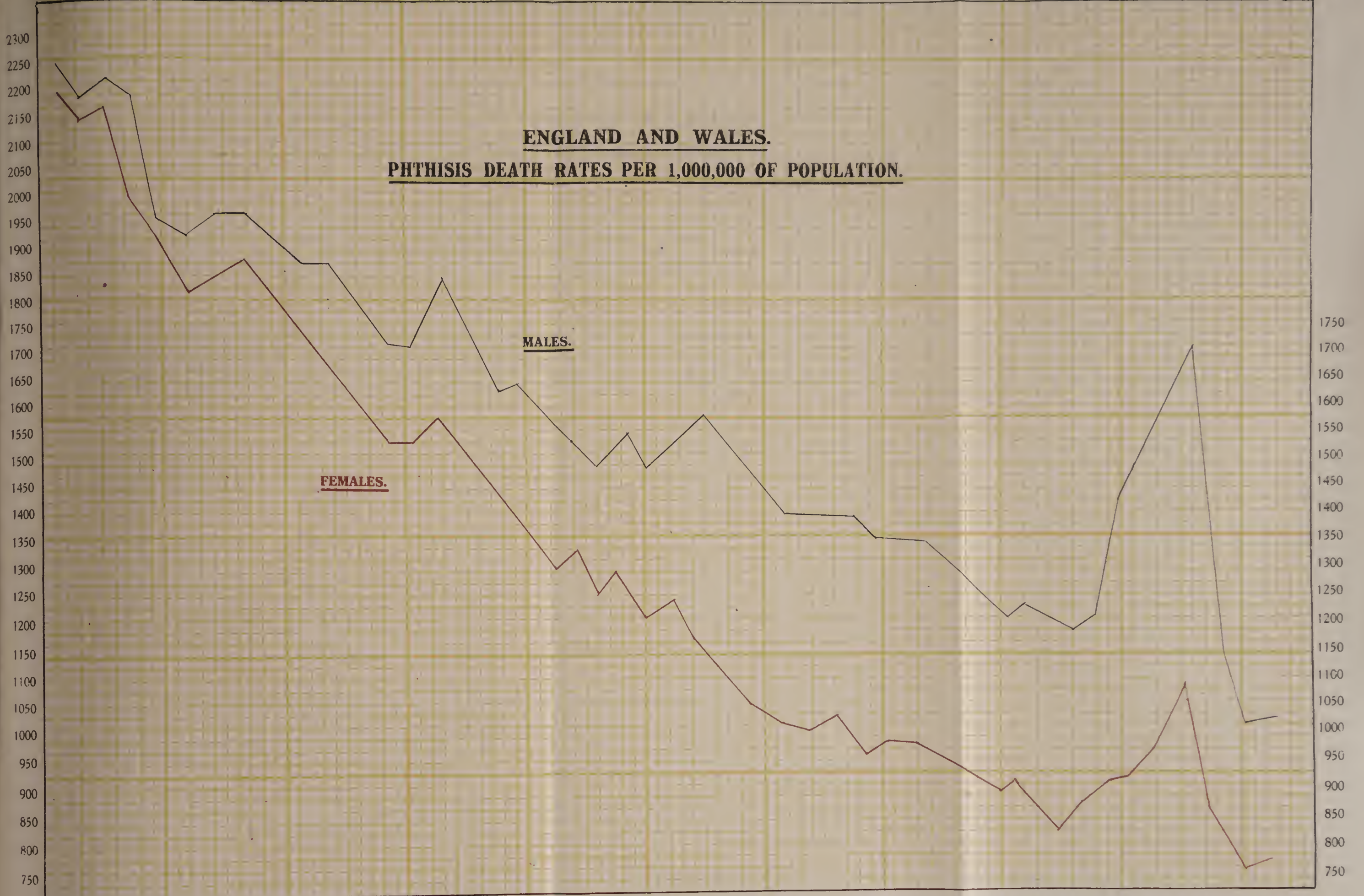
The site of the disease was as follows:—

	Total Cases.		Cases having a clear family history of Tuberculosis.	
	Cases.	Per cent.	Cases.	Per cent.
Bones and Joints ...	159	29.9	16	27.6
Abdominal ...	69	12.9	10	17.2
Peripheral Glandular ...	189	35.5	21	36.2
Meninges and Brain ...	72	13.5	6	10.4
Skin ...	9	1.7	1	1.7
Urinogenital ...	13	2.4	1	1.7
Ill-defined ...	21	3.9	3	5.2
	532		58	



1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922

ENGLAND AND WALES.
PHTHISIS DEATH RATES PER 1,000,000 OF POPULATION.



DEATHS FROM OTHER TUBERCULAR DISEASES.

The number of deaths from other Tubercular Diseases during the year was 240, and the number during each of the preceding ten years, 1912-1921, has been as follows:—328, 390, 376, 367, 382, 400, 391, 249, 250, 294.

DISTRICTS.	Tubercular Peritonitis.		Tubercular Meningitis.		Other forms of Tuberculosis.		YEAR 1922.		
	M.	F.	M.	F.	M.	F.	M.	F.	T.
Scotland ... ..	...	2	4	3	2	1	6	6	12
Exchange	3	1	4	3	2	3	9	7	16
Abercromby... ..	2	2	4	3	3	1	9	6	15
Everton	7	3	8	6	11	5	26	14	40
Kirkdale	3	2	2	3	3	4	8	9	17
West Derby (West)	5	5	5	6	5	3	15	14	29
Toxteth	9	5	6	3	9	4	24	12	36
Walton	4	...	12	4	4	1	20	5	25
West Derby (East)	4	1	6	3	4	4	14	8	22
Wavertree ... ..	...	2	3	3	4	1	7	6	13
Toxteth (East)	1	...	...	...	1	2	2	2	4
Garston ... ..	...	1	3	1	...	...	3	2	5
Fazakerley... ..	...	...	...	...	...	...	...	...	...
Woolton	1	...	1	2	1	1	3	3	6
City	39	24	58	40	49	30	146	94	240

AGES AT DEATH.

Under 1 year.	1—	2—	5—	10—	15—	20—	30—	40—	50—	60 & up- wards.	All Ages.
26	31	37	33	23	25	23	17	12	11	2	240

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

VENEREAL DISEASES.

The Royal Commission on Venereal Diseases which reported in 1916 made the first suggestions for grappling with these diseases. The recommendations may be summarised as follows:—

1. That opportunities should be afforded to sufferers to have free and expert treatment.
2. That extended facilities should be provided for the diagnosis of these diseases.
3. That information as to the dangers of Venereal Diseases should be disseminated and particulars as to the facilities provided for free treatment.

It is now five years since free treatment centres and arrangements for expert diagnosis were established under the Liverpool Venereal Diseases Scheme.

The following summarises the work of the Treatment Centres for the year 1922.

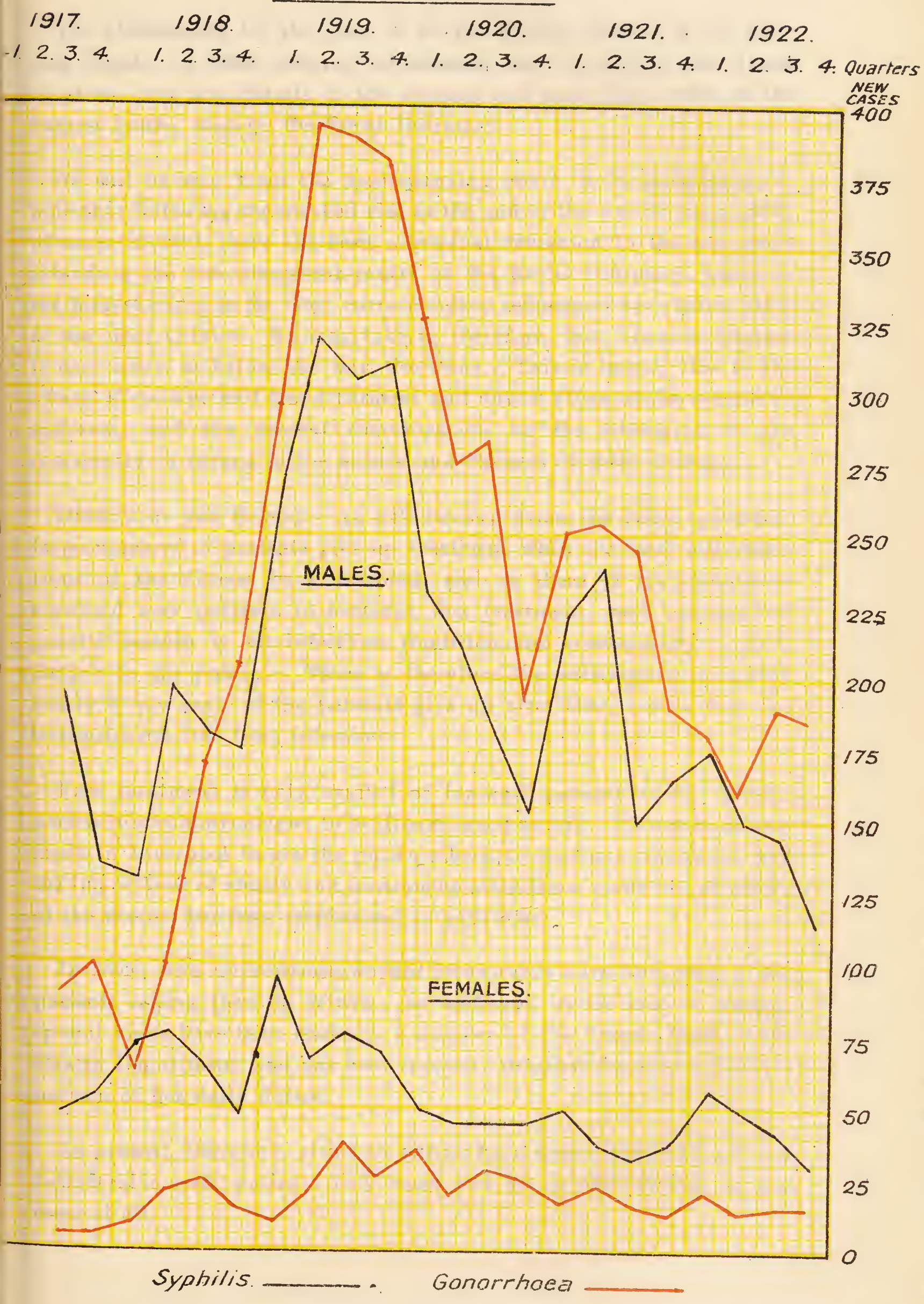
The Clinics which were established are very serviceable and popular. Patients attending the Out-Patients' Department of the Hospitals and those suffering from Venereal Diseases are directed to the Department dealing with their special ailment, and particular care is taken that such patients suffering from Venereal Disease are not singled out or made conspicuous.

The Clinics now in operation are—The Royal Infirmary, the Royal Southern Hospital, the David Lewis Northern Hospital and the Stanley Hospital.

During the year under review, there were 3,552 new patients, male and female, a reduction of 1,347 as compared with the figure for 1921. A suggested explanation of this reduction is that on account of unemployment and other industrial conditions, there was a lack of means. But apart from this, the value of efficient free treatment and education is beginning to make itself evident.

ROYAL INFIRMARY.

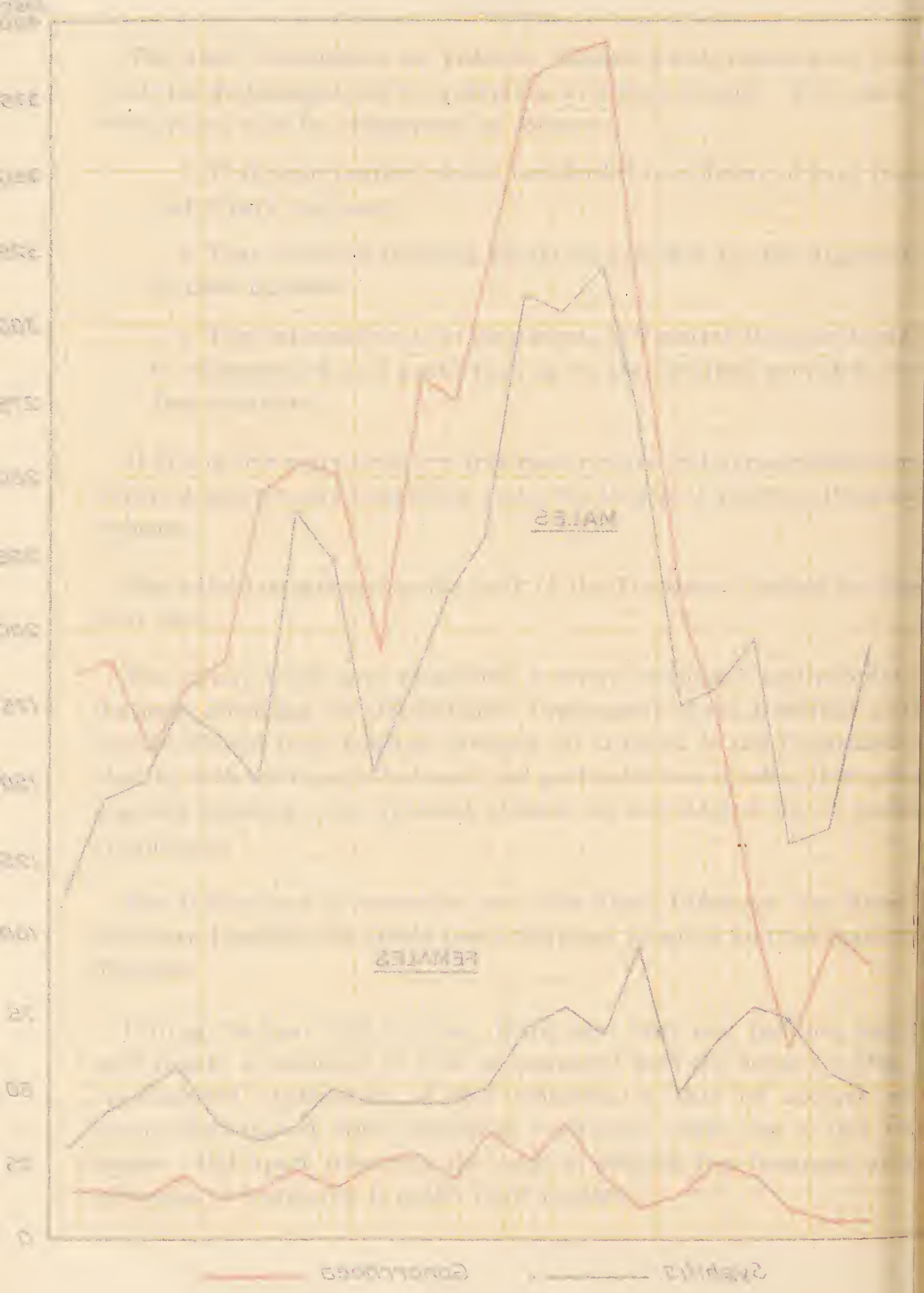
Chart showing new cases of Venereal Diseases since the opening of the Clinic on 8th. August 1917.



ROYAL INFIRMARY.

Chart showing new cases of Venereal Diseases since the opening of the Clinic on 6th August 1917.

Year	1917	1918	1919	1920	1921	1922
Males	234	152	241	152	141	134
Females	23	41	34	41	34	41



The attendances for the year at all the Clinics totalled 47,773 male and female. A table shewing attendances, etc., at each of the clinics is given, and also details of the diseases and sexes dealt with at the largest centre, namely, the Royal Infirmary.

As will be seen from the accompanying chart, it is satisfactory to note that following the marked rise at the end of the war in the number of cases in 1919, there has been a gradual reduction in the new cases attending the free treatment centre at the Royal Infirmary, which is the largest clinic in the city; corresponding reductions have taken place at the other Clinics. We may take it, therefore, that Venereal Disease is once more, as before the war, declining. This is largely due to the effects of prompt and free treatment and advice given at the centres to sufferers, and the general concentration on the education of the community in regard to the nature and dangers of these diseases.

DEFECTS OF THE SCHEME.—As will be seen from the table appended, large numbers of patients give up treatment when the local manifestations of the disease have subsided, and as there is no compulsion exercised over patients to continue this treatment, such persons frequently remain in an infectious condition and consequently a great danger to the public. There is therefore the outstanding fact that nearly 50 per cent. of the patients give up attendance before they can be considered free from infection.

Free treatment is only availed of for such periods as the affected person thinks appropriate, to be discontinued at will. Efforts have been made in Liverpool to get the patients back to continue treatment, and the importance of steady and continuous attendance under the guidance of the doctor, has been emphasised in each case.

In some cases appropriate worded letter-cards have been sent to the patients asking them to return. In addition, in the case of women, special visits have been made by a member of the Female Staff of the Health Department who has been specially detailed for this work as a portion of her daily duties.

At present, therefore, although clinics have been established at very considerable cost, patients may come and go as they please, or not come at all.

There is no power to compel a patient who is known to be suffering, in a very infectious form, from any one of these diseases, to undergo treatment or to continue treatment.

The very important report of the Committee on Venereal Diseases, under the chairmanship of Lord Trevethin, has just been issued, and upon the point just referred to, viz., the tendency of patients to cease treatment, the Report states that "closer investigation shows that by no means all the patients who have discontinued attendance before completing treatment were infectious. A large number of syphilis cases attending these centres were from the commencement of the treatment, past the infectious stage. Further, in gonorrhœa cases the standard of cure suggested by the Ministry of Health is very high, and to comply with it patients must be treated long after bacteriological evidence of the presence of gonococci has disappeared. Many cases classed as having failed to complete treatment appear to have ceased attendances with negative bacteriological tests for gonococci, and it is reasonable to suppose that a fair proportion of these were non-infectious." The fact, however, remains, that this defaulting of patients is an important factor in the spread of the venereal diseases.

The necessity for the provision of a home or hostel where young women suffering from venereal diseases could be housed during the infectious stage has been for some years recognised. Arrangements have been made with the Liverpool Diocesan Association to provide such an establishment, the Corporation to some extent financing the home under definite agreement.

The house originally taken for this work not proving satisfactory, new premises were acquired in the beginning of this year, and it is hoped that the work will now proceed under more favourable conditions. The home provides 15 beds for women of the class mentioned.

The problem of the educational and propaganda work in venereal diseases has engaged the attention of the Council during the year, and it has been felt for some time that new arrangements must be made so that this work shall be carried out by the bodies directly responsible for dealing with the other branches of the subject. The Medical Officer reported to the Committee as follows :—

VENEREAL DISEASES—PROPAGANDA WORK.

Adverting to the following resolution of the Venereal Diseases Sub-Committee of April 16, 1923, relating to the methods of carrying out propaganda in connection with the prevention of venereal diseases, viz. :—

“ That the Medical Officer report on the matter to the next meeting of this Special Sub-Committee, and that in the meantime a copy of such report be sent to each member,”

the Medical Officer begs to submit the following observations :—

The subject—in its various aspects—of the prevention of venereal diseases has engaged the attention of the Councils of the various Merseyside Boroughs through Committees specially appointed for the purpose, and, as a result of consultations and communications between those bodies, agreements have been reached as to the procedure which it is desirable to follow in regard to the prevention of these diseases.

The work of propaganda, which perhaps may have been regarded as relatively unimportant, has been outside the purview of these Committees, the work having been carried out by a voluntary body in association with the National Council for Combating Venereal Diseases, by means of funds subscribed by the various Riparian Authorities, viz., Liverpool, Birkenhead, Bootle, and Wallasey.

As the Committee are aware, the Chairmen of the various Health Committees, together with the Medical Officers of Health, have

been, and continue to be, in conference upon other important matters affecting the co-ordination of Merseyside Health Administration, and in regard to venereal diseases it will be fresh in the memory of the Committee that a line of procedure has already been approved by the Merseyside Authorities in regard to necessary legislation affecting venereal diseases.

The Medical Officer is of opinion that all propaganda work specifically dealing with the prevention or treatment of venereal diseases should be carried out by the bodies who are directly responsible for dealing with all other aspects of the question.

The Ministry of Health have now sanctioned the erection of a "Seamen's Dispensary" in the neighbourhood of the Sailors' Home, where facilities will be provided for the diagnosis and treatment of ailments associated with seafaring life. Where cases come under notice of a character more suitable for other general hospital treatment, such cases will be transferred to an institution where these complaints are treated.

The building is now in course of erection, and will meet a much needed want in the neighbourhood of centres where sailors and others connected with seafaring life usually congregate.

TOTAL NUMBER OF NEW CASES OF VENEREAL DISEASE AND THE ATTENDANCE AT THE VARIOUS CITY CLINICS DURING THE YEAR 1922.

Hospital.	Date of opening.	New cases. *	Attendances.	Number of Patients on the books.	Ceased attendance before completion.
Royal Infirmary	1/8/1917	2,195	29,217	3,696	1,285
Royal Southern	7/9/1917	542	5,335	1,128	272
David Lewis Northern	23/6/1919	477	8,259	757	404
Stanley	7/7/1919	338	4,962	893	122

CLASSIFICATION OF CASES ATTENDING THE LIVERPOOL ROYAL INFIRMARY DURING 1922.

	NEW CASES. *			CEASED TO ATTEND BEFORE CURE COMPLETED.			TOTAL ATTENDANCES.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Gonorrhœa	653	204	857	537	129	666	11,651	3,189	14,840
Chancres	789	87	876	570	49	619	11,830	1,187	13,017
Uncomplicated cases	3	—	3	—	—	—	27	—	27
Examined and found to be free from V.D.	385	74	459	—	—	—	1,191	142	1,333
Total	1,830	365	2,195	1,107	178	1,285	24,699	4,518	29,217

* The figures in these columns include "Re-admissions," *i.e.*, old patients who had ceased attending for more than six months.

The occupations followed by patients registered at the Clinics at the Royal Infirmary during the year are of interest:—

MALES.	FEMALES.
Seafaring people 575 (Of these 46 were foreign)	Housewife 143
Artizans 529	Home duties 56
Miscellaneous 317 (Clerks, Agents, Hawkers, &c.)	Unemployed 2
	Shop Assistants 10
	Factory Hands 5
	Housemaid 4
	Waitress 4
	Domestic servant 18
	Other occupations 15
1,421	257

In addition, 335 male and 86 female patients who had ceased attending for 6 months (or longer) resumed their attendances during the year.

40 per cent. of the total male patients registered were seafaring people. 8.0 per cent. of the latter were not natives of the British Isles, and are classed as follows:—

U.S.A. and Canada, 13; Colonies, 8; Norway and Sweden, 9; other nationalities, 16.

The ages range approximately from 15 to over 60 years, but the majority of the patients were between the ages of 20 and 30 years, as shown by the following table, viz. :—

	Male.	Female.
10—15	—	6
15—20	54	22
20—25	421	74
25—30	356	38
30—35	243	29
35—45	232	40
45—55	88	18
55—65	21	3
65 upwards	5	1

There were 26 infants and young children under 10 years of age who attended this Clinic during the year. Past experience shows that many cases of uncertain diagnosis, and simulating syphilis, especially skin eruptions, may be incorrectly reported, after hurried examination, as syphilitic. Many of them require a more careful investigation before a definite diagnosis could be made. This has also been experienced in the past in other diseases, e.g., typhoid fever, with which disease many simulating conditions were confused. Of the above 26 infants and children only nine were found to be suffering from syphilis, two from gonorrhœa, and 15 were non-venereal.

Correct diagnosis being very important, arrangements have been made with the City Bacteriologist to examine material, and the following extract from his Report gives the numbers and particulars of the specimens examined for the Liverpool Clinics, Hospitals and Private Practitioners:—

Detection of Spirochaetes	...	...	...	34
Detection of Gonococci	...	...	...	516
Wassermann Reaction for Syphilis	...	...	...	5,121
Still-born Infants	...	...	...	438
Ophthalmia Neonatorum	...	...	...	81
Total	...	...	...	6,190

As the majority of the specimens are sent from patients suspected to be suffering from Syphilis, or undergoing treatment, several specimens of blood may be sent from one case at different times, and, therefore, any percentages as to positive and negative results would be of no value.

STILL-BIRTHS.—Of the 438 still-born infants examined, 30 gave positive evidence of the presence of Syphilis (i.e., about 7 per cent.), and 21 were suspicious. In two of these suspicious cases the blood taken from the mother gave a positive Wassermann Reaction, and one gave a slight positive reaction. Although the percentage of syphilitic still-born infants is lower than usual there is no direct evidence as to whether this reduction is due to treatment.

The importance of this work is very great, for where the actual causal spirochaete has been discovered the mother (and in some cases the father) can be advised to submit to treatment. The special Health Visitor also undertakes the visiting of these cases, and visits to the number of 304 were made during the year.

In many instances great difficulty has been experienced in getting the mothers to attend for examination and treatment. A large number, however, have been persuaded to attend for treatment, but these women prefer to attend at hours other than those fixed in the regular Timetable; it is difficult to get those of the better class to continue attendance at regular clinics where prostitutes and other types of patients are brought together.

Of the 81 cases of Ophthalmia Neonatorum, 21 shewed the presence of Gonococcus, i.e., nearly 25 per cent. The importance of the examination of these cases at an early stage has been previously emphasised, and the results for this year have confirmed these observations. It is not infrequent to find no bacteria in the films, or bacteria of other types, staphylococci, pneumococci, etc.; the Bacteriologist is convinced that some of these cases are gonorrhœal in origin, but the gonococci are very few in number, the early examination making it difficult to discover them, and the early treatment preventing their development.

The following drugs have been issued to Institutions and Medical Practitioners by the Department during the year 1922 :—

ISSUE OF DRUGS TO CLINICS, HOSPITALS, AND PRIVATE PRACTITIONERS DURING 1922 FOR THE TREATMENT OF
 VENEREAL DISEASES.

ISSUED TO	NEOKHARSIVAN.					NOVARSENOBILION.					NOVARSENOBENZOL. C.					GALYL.				KHARSIVAN	
	0.30	0.45	0.60	0.75	0.90	0.15	0.30	0.45	0.60	0.90	0.15	0.30	0.45	0.60	0.90	0.15	0.20	0.30	0.40	0.40	0.60
Royal Infirmary ...	—	—	6	24	—	—	—	—	—	—	—	—	—	—	61	—	—	—	—	—	—
Southern Hospital ...	132	192	312	132	216	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Northern Hospital ...	264	276	240	—	192	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Stanley Hospital ...	1153	—	120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Edge Lane Hospital ...	60	—	48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL CLINICS ...	1609	468	726	156	408	—	—	—	—	—	—	—	—	—	61	—	—	—	—	—	—
Prison Hospital ...	—	—	—	—	—	20	460	600	320	50	—	—	—	—	—	—	—	—	—	—	—
Walton Institution ...	—	—	48	—	—	30	260	200	320	220	—	—	—	—	—	—	—	—	—	—	—
Cancer and Skin Hospital...	96	—	12	—	—	—	10	—	20	—	—	—	—	—	—	—	—	—	6	—	6
Brownlow Hill Hospital ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Eye and Ear Hospital ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Belmont Road Hospital ...	—	—	132	—	—	—	—	100	—	—	—	—	—	—	—	—	—	—	—	—	—
New City Hospital ...	12	—	12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fazakerley Sanatorium ...	24	—	24	—	12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lower Breck Road Hospital	—	—	12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alder Hey Hospital ...	288	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	30	—	—	—
TOTAL HOSPITALS ...	420	—	240	—	12	50	829	900	660	270	—	—	—	—	—	—	6	30	6	6	6
26 PRIVATE PRACTITIONERS	360	264	426	132	60	—	10	—	20	—	2	11	2	29	2	18	42	62	54	—	—
GRAND TOTAL ...	2389	732	1392	288	480	50	830	900	680	270	2	884	2	2635	63	18	48	92	60	6	6

Total Number of Doses of		To Clinics.		To Practitioners.		To Hospitals.	
NEOKHARSIVAN	...	3,367	...	1,242	...	672	...
NOVARSENOBILION	...	—	...	30	...	2,700	...
NOVARSENOBENZOL. C.	...	3,540	...	46	...	—	...
GALYL	...	—	...	176	...	42	...
KHARSIVAN	...	—	...	—	...	12	...

The Trevethin Committee reported as follows on the best medical measures for preventing venereal diseases in the civil community :—
 “ Upon the evidence we conclude that the success of any general public facilities for self-disinfection is likely in the civil community to be very small. At the same time, in face of the fact that disinfection, in the case of an individual user, if properly and promptly applied, will in all probability be successful, we do not think that there is any justification for putting obstacles in the way of individuals who desire to procure the necessary disinfectants, and we think the law should be altered so as to permit properly certified chemists to sell *ad hoc* disinfectants, provided such disinfectants are sold in a form approved; and with instructions for use approved by some competent authority.” The Committee suggest that the Medical Research Council should be invited to undertake this task. They think, however, “ that the commercial advertisement of *ad hoc* disinfectants should be prohibited.”

The Committee emphasized that, speaking broadly, the general medical practitioner is not yet adequately equipped with the most advanced knowledge of venereal diseases and their treatment to enable him to deal competently with all the cases that come before him and that an improvement in medical education in regard to venereal diseases is necessary. In the new regulations of the General Medical Council it is set out that no student will be admitted to the final examination for practice in medicine or surgery unless it is certified that he has been efficiently instructed in the diagnosis of venereal diseases, both clinically and in the laboratory. This is an advance which has been generally felt to be very necessary.

SUGGESTIONS FOR IMPROVEMENT.—The Committees of the Liverpool Corporation dealing with these diseases have for some years felt that they should be dealt with under another system or the present schemes be strengthened by the addition of some compulsory powers which should be given to local Health Authorities to compel the sufferer to seek a doctor's advice and to follow it should he be found to suffer from the disease. Those who, after repeated warnings, deliberately refuse treatment should be punished, and public opinion would justly agree with this course.

Ophthalmia Neonatorum (the majority of which cases are of venereal origin) has been compulsorily notifiable for some years under regulations issued by the Ministry of Health.

The effects of legislation in Western Australia where notification of Venereal Diseases is made compulsory, but without name or address, have been good.

The powers suggested in the proposals of the Liverpool Corporation need not of necessity be used it might be left to local Health Authorities to adopt such of them as appeared desirable for their respective areas.

If it can be brought home to the patient that it is his duty to himself and to his fellow men to follow a full and proper course of treatment until free from liability to infect others, much good will be attained.

The Liverpool Health Committee think these ends can be reached by making it obligatory for everyone who suffers, or suspects he is suffering, to seek medical advice and to follow the doctor's instructions; in no case will secrecy be betrayed, and it would only be in cases of deliberate discontinuance that prompt action would be taken by the Health Authority in the public interest.

The problem of the application of compulsory treatment and if necessary detention upon those who suffer was fully considered by the Trevethin Committee. The principle of the present system is to maintain secrecy and encourage sufferers to come for treatment and to continue treatment. The Committee thinks that in the present state of public opinion any system of general compulsory notification would tend to concealment and prove a backward step.

The Trevethin Committee points out that there is one practical difficulty in the way of any form of notification re-inforced by measures of compulsory treatment, that in the present state of knowledge there is no standard of non-infectivity or cure generally accepted by the medical profession, and until this has been attained it is difficult to see how any system involving notification and compulsory means of

treatment could be applied. The following quotation from the report deserves notice :—

“ Notwithstanding what we have said we are of opinion that it may well be that in certain areas, special means for the prevention of venereal diseases would be justifiable, e.g., measures dealing with defaulters, and in a large seaport town public ablution centres for disinfecting in the neighbourhood of docks, and we think that Local Health Authorities who are able to make to the Ministry of Health a special case for some such special measure should be allowed, at any rate for some limited period, by way of experiment, to carry out the measures they propose under the present system, by which a contribution towards the expense is made by the State. In this way there may ultimately be built up a body of experience of great value in determining future policy.”

HOSPITAL ADMINISTRATION.

During the year 1922 the City Infectious Hospitals and Sanatoria were in full commission.

At the end of the year the amount of hospital accommodation for infectious cases was as follows:—

City Hospital North	...	...	...	...	166 beds
„ „ South	...	...	...	...	96 „
„ „ East	...	...	...	...	153 „
„ „ Fazakerley	...	...	...	...	300 „
„ „ Fazakerley Annexe	...	...	...	...	160 „
„ „ Sparrow Hall	...	...	...	...	150 „
Deysbrook Hospital	...	...	...	...	110 „
Parkhill Sanatorium	...	...	...	...	100 „
Fazakerley Sanatorium	...	...	...	...	240 „
Highfield Sanatorium	...	...	...	...	320 „
					<hr/> 1,795 <hr/>

Deysbrook Hospital belongs to the West Derby Board of Guardians, but by arrangement had been in the possession of the Corporation from October, 1914, and was used for convalescent cases. The tenancy terminated on 29th March, 1923.

Highfield Sanatorium is an Institution belonging to the West Derby Board of Guardians, and was built to accommodate Poor Law cases. It is well adapted, however, for the treatment of tuberculosis, and was taken over for a period of two years by the Liverpool Corporation from the Poor Law Authority. Occupation commenced on the 7th May, 1921, and at the end of the year there were 272 patients suffering from tuberculosis resident in this Institution.

The value of the hospitals, and the immense amount of useful work performed, is shown by the fact that no less than 5,231 patients were treated within their walls during the year.

Arrangements have been made between the Hospitals Committee and various Local Authorities to receive cases of infectious disease from districts beyond the City boundary, namely, Sefton Rural District, Waterloo and Seaforth, Great Crosby, Little Crosby, Leasowe Hospital, and the Children's Convalescent Home, West Kirby.

Arrangements have also been made to deal with any case of cholera, yellow fever, or plague, which may arise in any of the neighbouring Urban or Rural Districts. A suitable charge is made in each case.

THE HOSPITAL SERVICE.

FAZAKERLEY HOSPITALS AND SANATORIUM.

REPORT OF THE MEDICAL SUPERINTENDENT.

YEAR ENDING 31ST DECEMBER, 1922.

The total number of patients admitted to the Fazakerley Hospitals (excluding the Sanatorium) during the year ending 31st December, 1922, shows a decrease of 979, as compared with that of the previous year. The number of cases under treatment at one time reached a maximum of 315 on January 24th. The following figures represent the gross monthly admissions:—

January	...	...	200	July	...	...	141
February	...	...	158	August	...	...	151
March	...	...	168	September	...	...	137
April	...	...	102	October	...	...	142
May	...	...	136	November	...	...	186
June	...	...	131	December	...	...	204

ANALYSIS OF CASES DYING WITHIN 48 HOURS OF ADMISSION.

Disease.		Age.	Days ill prior to admission.	No. of hours in hospital.
Scarlet Fever	...	2 years.	1	30
Do.	...	12 ,,	1	36
Diphtheria	...	8 months.	2	31
Do.	...	5 years.	7	10
Do.	...	1 year.	4 hours.	31

Disease.			Age.	Days ill prior to admission.	No. of hours in hospital.
Diphtheria	...	...	9 months.	3	15
Do.	...	...	7 „	7	16
Broncho-Pneumonia	...	...	5 „	3	17
Do.	...	...	11 „	3	18
Lobar Pneumonia	...	...	48 years.	5	7
Pertussis	...	...	5 months.	10	45
Do.	...	...	1 year.	21	10
Do.	...	...	3 years.	8	2
Erysipelas	...	...	78 „	3	31
Do.	...	...	21 „	10	19
Influenza	...	...	33 „	7	42
Typhoid Fever...	...	...	39 „	13	42
Cerebro-Spinal Fever			2 „	3	3
Pernicious Anæmia	...	...	52 „	4 weeks.	32
Premature Birth	...	...	1 day.		32

TUBERCULOSIS.

The considerable proportion of surgical cases of this disease referred to in the Report for 1921 has persisted during 1922. The following review of cases treated during the year is submitted by Mr. J. T. Morrison, Visiting Surgeon to the Fazakerley Sanatorium:—

At the beginning of 1922 there were 66 patients in the Sanatorium suffering from various tubercular conditions demanding special surgical treatment. At the end of the year there were 105. This increase of 39 represents the constant tendency. The following analysis of patients discharged during 1922 gives a general idea of the results of treatment. The figures refer to adults only. It should be remembered that from a statistical point of view the number is small, and further, that the surgical section of the Sanatorium has not yet been sufficiently long open for the full effects of the treatment to be shown. These figures will, however, in time be merged with others, to give a more accurate picture of the result.

ADULTS ONLY.

	Part Affected.	Total.	Average stay in Hospital.	RESULT.			
				Quiescent.	Improved.	Not improved.	Died.
Early Cases.	Bones and Joints	2	3·5 mos.	—	2	—	—
	Abdomen	1	10 „	1	—	—	—
	Genito-Urinary System ...	0	—	—	—	—	—
	Lymphatic Glands	2	16 mos.	2	—	—	—
	Miscellaneous	0	—	—	—	—	—
	Total	5		60 %			
Late Cases.	Bones and Joints	10	6·9 mos.	1	—	5	4
	Abdomen	1	11 „	—	—	—	1
	Genito-Urinary System ...	2	18·5 „	—	1	—	1
	Lymphatic Gland	1	1 „	—	—	—	1
	Miscellaneous	0	—	—	—	—	—
	Total	14		7 %			
				ADULTS ONLY.			
Early Cases.	Bones and Joints	7	12·7 mos.	6	1	—	—
	Abdomen	4	7·2 „	4	—	—	—
	Genito-Urinary System ...	2	18 „	—	1	1	—
	Lymphatic Glands	9	7 „	8	1	—	—
	Miscellaneous	1	12 „	1	—	—	—
	Total	23		82·6 %			
Late Cases.	Bones and Joints	7	13·7 mos.	1	1	1	4
	Abdomen	3	9·6 „	1	—	—	2
	Genito-Urinary System ...	3	4·6 „	—	2	1	—
	Lymphatic Glands	2	4 „	—	1	1	—
	Miscellaneous	1	—	—	—	—	1
	Total	16		12·5 %			

It is important to notice the division of patients into cases complicated with phthisis, and those with lungs free from disease. The outlook is very different in the two types, and unfortunately the first group—those with lung infection as well as surgical lesions, in whom the prognosis is definitely graver—account for no less than 33 per cent. of the total numbers. The high percentage of “Early” “non-pulmonary” cases discharged with the disease quiescent should not be lost sight of, and is a source of great pleasure.

The year that is past is noteworthy for the attempt to apply the principles of “sun treatment” as developed in the hospitals of Dr. Rollier in Switzerland. The climate of this country does not lend itself readily to these methods, and especially was this true of the summer of 1922. Nevertheless, a sufficiently extensive trial was made to make it clear that in exposure of the body to the direct rays of the sun, we have a supplementary method of treatment of considerable value.

Efforts have also been made during the year to assess the place to be assigned to X-ray treatment in dealing with tubercular processes. In carefully selected cases, and particularly cases of glandular tuberculosis in the neck with abscess formation and discharging sinuses, excellent results have been obtained by means of X-ray therapy.

For several reasons, such as the preponderance of adults, the frequency of lung complications, and the numbers requiring treatment, treatment tends to be less conservative than could be desired. On the other hand, there are certain cases, notably severe cases of tubercular glands in the neck, unsuitable for radio-therapy, where radical operative measures offer the best, and quickest, hopes of success.

It cannot, however, be said that by any or all of these measures it is possible with any degree of certainty to stay, in all cases, the onward march of this most insidious disease.

The limited accommodation available for coping with cases of surgical tuberculosis in the City makes it imperative that such accommodation as is available should be used in the most efficient and economical way, and in such a manner as to secure the maximum amount of good to the community as a whole. There are really three types of patients to be considered:—

A. Early, or mild cases where the chances of return to a useful life are good. These can often be dealt with perfectly efficiently at a well-organised convalescent home run on comparatively inexpensive lines.

B. More serious cases demanding careful and skilled nursing, and frequently constant surgical attention as well, but who still have a reasonable chance of recovery. These require at first the staff and facilities of a thoroughly equipped Sanatorium hospital, though they may be later on transferred to Class A.

C. Patients in the final stages of tuberculosis in whom hopes of checking the disease are practically nil. One would like, of course, to see them given the same chances as those in Category B, but if there is a necessity to choose between the two, preference must be given to the latter. Class C can be dealt with humanely and efficiently at any of the older types of hospital where there is a medical and trained nursing staff.

In the course of one's work at Fazakerley it is constantly being borne in on one's mind that here, if anywhere, we have a hospital ideally adapted to the treatment of patients in Class B, and that only by specialising in such cases can the Sanatorium render its full quota of public service.

In conclusion, one would like to pay a testimony to the great devotion of the nursing staff in what is difficult, and often trying work, and to the most helpful co-operation of the present medical staff.

DENTAL TREATMENT.

The Hospitals Committee sanctioned in November, 1922, the employment of a Dental Surgeon at the Fazakerley Sanatorium. It is intended that dental services should not include the provision of dentures, but should be limited to extractions, fillings, scalings, etc., necessary to the relief of pain, or removal of sepsis. Ex-service men dealt with by the Ministry of Pensions are excluded from this scheme.

Although dental treatment has thus been available for a few weeks only in 1922, the results obtained leave no doubt as to the importance of this work. A report of the Dental Surgeon, with particulars of the work done, will appear in due course.

CLASSIFICATION OF CASES.

Pulmonary	{	A	...	...	...	...	181
		B—I.	...	...	...	...	38
		B—II.	...	...	...	...	85
		B—III.	...	...	...	...	101
		Non-pulmonary			...	...	58
		Non-tubercular			...	...	6

OCCUPATIONS LIST.

MALE.

School-boy	...	...	45	Slaughterman	...	...	3
Labourer	...	...	39	Tram Conductor	...	...	3
Carter	...	...	13	Upholsterer	...	...	3
Clerk	...	...	13	Waiter	...	...	3
Ship's Steward	...	...	11	Barman	...	...	2
Dock Labourer	...	...	9	Boilermaker	...	...	2
Engineer	...	...	6	Casual Porter	...	...	2
Fireman (Marine)	...	...	5	Cotton Porter	...	...	2
Soldier	...	...	5	Grocer	...	...	2
Ship's Cook	...	...	4	Jobber	...	...	2
Joiner	...	...	4	Packer	...	...	2
Oilcake Miller	...	...	4	Painter	...	...	2
Warehouseman	...	...	4	Pawnbroker	...	...	2
Chauffeur	...	...	3	Plasterer	...	...	2
Checker	...	...	3	Plumber	...	...	2
Commercial Traveller	...	...	3	Railway Porter	...	...	2
Hairdresser	...	...	3	Tailor	...	...	2
Navy	...	...	3	Various	...	...	64

FEMALE.

School-girl	...	...	56	Book-binder	...	...	2
Housewife	...	...	54	Companion	...	...	2
Clerk	...	...	10	Confectioner	...	...	2
Nurse	...	...	8	Cook	...	...	2
Shop-assistant	...	...	5	Machinist	...	...	2
Actress	...	...	3	Packer	...	...	2
Domestic Servant	...	...	3	Telephone Operator	...	...	2
Housemaid	...	...	3	Typist	...	...	2
Tobacco-stripper	...	...	3	Waitress	...	...	2
Barmaid	...	...	2	Various	...	...	25

PARKHILL SANATORIUM.

REPORT OF THE MEDICAL SUPERINTENDENT.

The number of beds has been reduced from 225 to 100, the latter figure being reached on June 30th.

The admissions in 1922 totalled 161, which number included 132 males and 29 females. Of the male admissions, 67 were ex-service men.

In all cases the primary lesion was in the lung.

AGE PERIODS.—The age periods of the cases admitted were as follows :—

	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	Total.
No. of cases	2	16	36	31	35	34	7	161

CLASSIFICATION.—The classification of the admissions has been carried out on the lines suggested by the Ministry of Health, and is represented by the following table—where Class A includes those cases without sputum or in whose sputum no tubercle bacilli were found; Class B those in whose sputum tubercle bacilli were found; B i., disease of comparatively slight degree; B ii. disease of medium degree; B iii., more severe cases.

Class A, 92 cases; Class B i., 5 cases; Class B ii., 17 cases; Class B iii., 47 cases. The proportion of Class A cases is high owing to the number of children under treatment.

GRADUATED EXERCISES.—Patients have been engaged on gardening work in the grounds, work of other nature not being undertaken owing to the insecurity of tenure of the Sanatorium site.

SCHOOL.—The work of the School has proceeded very satisfactorily under Miss McKay. The average attendance during the first six months of the year was 51; during the second half of the year, owing to the reduction in the number of cases in the Sanatorium, the average

attendance fell to 29. The grading of the children has again been a difficulty owing to the marked variation in their age and educational attainments. As to age, the variation is shown in the following table, which refers to the period of the first six months of the year, during which there were 60 children on the School register : —

Ages.	6	7	8	9	10	11	12	13	14	15
Numbers of Children...	3	2	7	11	6	3	10	6	10	2

The grading has been rendered even more difficult by the varied educational standard of the children, as is evidenced by the fact that of the above number 14 children over the age of nine years could neither read nor write on admission to the School, owing to irregular attendance at School through ill-health previous to admission to Sanatorium. These difficulties have been met by methods of grouping, in which the more advanced children of each group are encouraged to assist the more backward, and in addition senior pupils assist by supervising several groups. All these children made excellent progress, and in general the results have been most encouraging, and have again borne out the previous conclusions as to the favourable effect of the mental stimulus of the School on the reaction of the children to treatment.

In addition to the School duties Miss McKay has also devoted time to organising the games and amusements of the children. Miss James, supervisor of Special Schools under the Education Committee, has continued to give valuable advice on technical matters.

Boy Scouts.—It was felt that the principles underlying the “Scout” movement would be of value in the formation of character and in combating that slackness which is so prevalent a symptom, and would thus aid in the maintenance of health in after years.

In the spring of 1922, through the kind offices of Mr. H. G. Jones, of the Northern Division of “Scouts,” a number of the boys were instructed and eventually enrolled as “Scouts.” Mr. C. Haswell, of the Southern Division Rover Scouts, followed in July, and in September the Scouts

were registered as a Troop (the 191st Troop), with Mr. Haswell as Scoutmaster, the Scouts numbering 14. At the same time a "Cub" Pack was formed, of which Mr. A. Pottier took charge, nine boys being enrolled. Instruction has been carried out in the various branches of training in the "Scout" movement, and proficiency badges awarded, the boys taking a keen interest in their work.

HIGHFIELD SANATORIUM.

REPORT OF THE MEDICAL SUPERINTENDENT.

The number of patients admitted to the Sanatorium suffering from Tuberculosis during the year was 662, viz., 412 males and 250 females.

In the classification of cases the method suggested by the Ministry of Health has been followed, in which the pulmonary cases which have no sputum, or whose sputum is negative, are included in Class A, and those with positive sputum in Class B, the cases in Class B being further grouped according to the stage of the disease.

The following table represents the final classification of the pulmonary cases on discharge. There was, in addition, one non-pulmonary case.

Class A	...	...	...	...	179
Class B _I	...	...	...	...	96
Class B _{II}	...	...	...	...	143
Class B _{III}	...	...	...	...	220

The age periods of the patients admitted during the year were as follows:—

10—20 years	...	...	...	...	91
20—30 „	...	...	...	...	182
30—40 „	...	...	...	...	148
40—50 „	...	...	...	...	148
50 upwards	...	...	...	...	93
					662

The following tables, prepared by the Medical Staff of each of the City Hospitals show the number of patients, the nature of the illness, and the results at each of the ten hospitals during the year 1922:—

CITY HOSPITAL NORTH, NETHERFIELD ROAD.

Visiting Physician, Dr. R. I. RICHARDSON.

Resident Physician, Dr. EDWARD R. PEIRCE.

DISEASES.	Remaining Dec., 31st, 1921.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treatment during the year.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged Cured.	Remaining at end of year.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever.	141	768	—	909	240	47	515	91	2	16	2·08
Typhus Fever.	—	—	—	—	—	—	—	—	—	—	—
Enteric Fever.	1	—	—	1	—	—	1	—	—	—	—
Diphtheria ...	—	1	—	1	—	—	1	—	—	—	—
Measles ...	1	1	—	2	—	—	2	—	—	—	—
Other Diseases	—	6	—	6	—	—	5	—	—	1	16·7
Isolation and Observation Cases ...	—	14	—	14	—	—	11	3	—	—	—
Totals ...	143	790	—	933	240	47	535	94	2	17	2·2

CITY HOSPITAL SOUTH, GRAFTON STREET.

Visiting Physician, Dr. H. A. CLARKE.

Resident Physician, Dr. RITA HENRY.

DISEASES.	Remaining Dec. 31st, 1921.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treatment during the year.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged Cured.	Remaining at end of year.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Enteric Fever..	—	—	—	—	—	—	—	—	—	—	—
Scarlet Fever.....	41	400	—	441	207	2	185	42	2	5	1.25
Diphtheria	1	—	—	1	—	—	1	—	—	—	—
Measles	44	269	—	313	—	—	265	28	4	20	7.43
Other Diseases.....	2	19	—	21	—	1	18	—	1	2	10.52
Isolation & Obser- vation Cases		39	—	39	—	—	34	5	—	—	—
Totals	88	727	—	815	207	3	503	75	7	27	3.71

FAZAKERLEY SANATORIUM.

Medical Superintendent, Dr. C. RUNDLE.

Principal Resident Medical Officer, Dr. W. CRANE.

*Assistant Resident Medical Officers, Drs. A. E. CONNOLLY and
B. G. ELLIOTT*

DISEASES.	Remaining Dec. 31st, 1921.	Admitted during the year.	Transferred from other City Hospitals	Total under Treat- ment during the year.	Transferred to Convalescent Hospital	Transferred to other City Hospitals.	Discharged.	Remaining at end of year.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Tuberculosis	286	469	16	755	—	—	372	307	—	76	16.1

CITY HOSPITAL, FAZAKERLEY ANNEXE.

Medical Superintendent, Dr. C. RUNDLE.

Assistant Resident Medical Officer, Dr. A. E. BURNS.

Diseases.	Remaining Dec. 31st, 1921.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treatment dur- ing the year.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged Cured.	Remaining at end of year.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever.....	94	253	36	383	—	—	326	56	—	1	0.39
Enteric Fever	—	—	—	—	—	—	—	—	—	—	—
Diphtheria	5	37	1	43	—	1	41	—	—	1	2.7
Measles	21	4	—	25	—	—	23	—	—	2	50.0
Whooping Cough ...	—	—	—	—	—	—	—	—	—	—	—
Other Diseases.....	1	24	1	26	—	1	25	—	—	—	—
Isolation and Observation Cases	—	3	—	3	—	—	3	—	—	—	—
Totals	121	321	38	480	—	2	418	56	—	4	1.2

CITY HOSPITAL, FAZAKERLEY.

Medical Superintendent, DR. C. RUNDLE.

Principal Resident Medical Officer, DR. A. E. HODGSON.

*Assistant Resident Medical Officers, DRs. C. ABERNETHY and
L. DENIL.*

DISEASES.	Remaining Dec. 31st, 1921.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treatment dur- ing the year.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged Cured.	Remaining at end of year.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever...	47	495	20	562	—	12	402	135	2	13	2.6
Enteric Fever..	2	17	—	19	—	—	13	5	1	1	5.9
Para-Typhoid Fever	—	2	—	2	—	—	2	—	—	—	—
Diphtheria.....	15	143	1	159	—	—	121	28	5	10	6.9
Smallpox	—	1	—	1	—	1	—	—	—	—	—
Measles	55	67	—	122	—	—	113	3	—	6	8.9
Whooping Cough.....	3	55	—	58	—	10	31	10	3	7	12.7
Phthisis	—	—	—	—	—	—	—	—	—	—	—
Other Diseases.	50	418	3	471	—	11	366	52	9	42	10.0
Isolation and Observation Cases.....	3	17	—	20	—	—	18	2	—	—	—
Totals.....	175	1215	24	1414	—	34	1066	235	20	79	6.5

CITY HOSPITAL, DEYSBROOK, WEST DERBY.

Visiting Physician, Dr. W. J. ROBERTSON DUNN.

Diseases.	Remaining Dec. 31st, 1921.	Admitted during the year	Transferred from other City Hospitals	Total under Treatment during the year	Transferred to Convalescent Hospital	Transferred to other City Hospitals	Discharged Cured	Remaining at end of year	Died within 48 hours of Admission	Total Deaths	Total Mortality per cent. of Admissions
Scarlet Fever ...	106	24	435	459	—	2	392	54	—	1	4.2

PARKHILL SANATORIUM.

Medical Superintendent, Dr. H. R. MACINTYRE.

Senior Assistant Medical Officer, Dr. W. HUNTER BROWN.

Assistant Medical Officer, Dr. WYNDHAM WILLIAMS.

DISEASES.	Remaining Dec 31st, 1921.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treat- ment during the year.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged.	Remaining at end of year.	Died within 48 hours of admission	Total Deaths.	Total Mortality per cent. of Admissions.
Phthisis	210	161	—	371	—	14	212	94	1	51	31·7

CITY HOSPITAL EAST, MILL LANE, OLD SWAN.

Visiting Physician, DR. H. A. CLARKE.

Resident Medical Officer, DR. F. WEIGHTMAN.

DISEASES.	Remaining Dec. 31st, 1921.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treat- ment during the year.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged.	Remaining at end of year.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever.....	—	4	—	4	—	—	3	1	—	—	—
Enteric Fever	—	—	—	—	—	—	—	—	—	—	—
Diphtheria.....	86	697	—	783	—	1	654	71	14	57	8·2
Measles	15	24	—	39	—	—	29	—	—	10	41·7
Other Diseases	11	27	—	38	—	—	18	12	—	8	29·6
Isolation and Obser- vation Cases ...	—	1	—	1	—	—	1	—	—	—	—
Totals.....	112	753	—	865	—	1	705	84	14	75	9·9

CITY HOSPITAL, SPARROW HALL.

Medical Superintendent, DR. C. RUNDLE.

DISEASES.	Remaining Dec.. 31st, 1921.	Admitted during the year.	Transferred from other City Hospitals.	Total under Treatment during the year.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged Cured.	Remaining at end of year.	Died within 48 hours of admission.	Total Deaths.	Total Mortality per cent of Admissions.
Scarlet Fever.....	61	64	8	133	—	1	128	3	—	1	1.5
Whooping Cough...	15	22	17	54	—	—	43	11	—	—	—
Measles	1	17	3	21	—	—	15	5	—	1	5.9
Other Diseases	4	106	16	126	—	1	104	20	—	1	0.9
Isolation and Observation Cases	2	5	—	7	—	—	5	2	—	—	—
Total	83	214	44	341	—	2	295	41	—	3	1.4

HIGHFIELD SANATORIUM.

Resident Physician, DR. H. R. MACINTYRE.

*Resident Medical Officers, Drs. ETHEL R. GRIFFITHS,
MARGT. FERRIER,
ESTHER ASHWORTH and
EVELINE F. BEBINGTON.*

DISEASES.	Remaining 31st Dec., 1921.	Admitted during the year.	Transferred from Parkhill Sanatorium.	Total under Treatment during the year.	Transferred to Convalescent Hospital	Transferred to Fazakerley Sanatorium.	Discharged Cured	Remaining at end of year	Died within 48 hours of Admission	Total Deaths	Total Mortality per cent. of Admissions
Phthisis	266	662	...	928	—	—	460	289	—	179	27.0

SANITARY ADMINISTRATION.

For the purpose of carrying out the requirements of the various Sanitary Acts of Parliament and the Orders, Bye-laws and Regulations made thereunder, the following staff of the Medical Officer of Health's Department has been employed during the year.

	Males	Females
*Chief Sanitary Inspector	1	—
*Deputy Chief Sanitary Inspector	1	—
*Prosecuting Sanitary Inspectors	10	—
*District Sanitary Inspectors	34	—
¹ Food Inspectors	11	—
(These Inspectors and the Port Sanitary Inspectors assist in carrying out the provisions of the Diseases of Animals Acts)		
*Inspectors under the Food and Drugs, etc., Acts ...	3	1
* „ of Cowsheds and Milkshops	2	—
* „ under the Shops Acts	2	1
* „ „ Factories and Workshops Acts ...	4	—
(These Inspectors are also appointed under the Shops Acts)		
² Smoke Inspectors	3	—
³ Inspectors of Common Lodging Houses and Houses let in Lodgings	17	—
*Inspectors of Canal Boats	1	—
⁴ Ambulance and Disinfecting Superintendents and Inspectors	15	—
Motor Ambulance Drivers	8	—
Rat Catchers	9	—
Men engaged stripping walls and spraying infected houses, limewashing middensteads, etc. ...	21	—
*Notice Servers	3	—
Chief Clerk	1	—
Clerical Staff (Permanent)	29	—
„ „ (Temporary)	2	4
„ „ (Health Visitors, etc.)	—	5
„ „ (Tuberculosis Branch)	3	10
⁵ Health Visitors, School Nurses, etc. (Permanent) ...	—	58
⁵ „ „ „ „ (Temporary)	—	16

	Males	Females
⁶ Inspectors under the Midwives' Act	—	3
⁷ Ophthalmia Neonatorum Nurses	—	2
Superintendent and Assistants at Infant Milk Centres		
(Permanent)	1	12
Temporary Assistants at Infant Milk Centres ...	4	33
⁸ Nurses at Tuberculosis Institutes	—	5
Caretakers at Tuberculosis Institutes	2	—
,, Ford Street Mortuary	—	1
Women engaged cleansing Verminous Children ...	—	2
<i>Day Nurseries, Maternity Home and Clinics.</i>		
Matrons	—	10
Deputy-Matrons	—	6
Nurses and Probationers	—	38
Domestic Staff, including Gardener and Cleaners ...	1	55
<hr/>		
Total number of Staff	188	262
<hr/>		

In every case Officers are selected for these positions whose previous training and occupation have been such as to fit them for the special duties they are called upon to discharge. Those marked * are required to hold a certificate affording evidence of adequate sanitary instruction.

¹ Have special training in each branch of the work, *i.e.*, Butchers, Fishmongers, Fruiterers, &c., are also certificated. ² Hold Marine Engineer's First Class Certificates. ³ Several hold the certificate of the Liverpool University School of Hygiene, the Royal Sanitary Institute or an equivalent thereto. ⁴ The Ambulance Superintendent holds the certificate of St. John Ambulance Association.

⁵ Fully-trained and Certificated Nurses or other special qualifications.

⁶ Registered Midwives with special qualifying certificates. ⁷ Fully-trained Nurses with special training in Ophthalmia Neonatorum.

⁸ Fully-trained Nurses. The additional certificates usually held by the Health Visitors' Staff, in addition to the certificate of training as a nurse are those of the Central Midwives' Board, the Liverpool University School of Hygiene, the Royal Sanitary Institute, and, or, the Sanitary Inspectors' Examination Board.

The number of occasions upon which the advice and assistance of the Health Department have been sought has decreased during the year. These applications fluctuate year by year; in 1910 they were 9,354; in 1920, 18,730; in 1921, 20,688; and in 1922, 18,934. As in former years, complaint in many cases was made to the Health Department only after repeated requests addressed to the persons causing or allowing the nuisance, or to owners or agents of property, had been ignored. A great deal of the time of the Inspectors was taken up by these special examinations.

Requests to examine important public buildings and offices, as well as highly rented dwelling-houses, are numerous, and the application of the smoke test has in many cases brought to light defects in the drainage system.

The District Sanitary Inspectors visit at the earliest possible moment all premises where a nuisance is complained of, and last year 28,746 nuisances were discovered as the result of complaints. Preliminary notices were served either on the owners or the occupiers to remedy 24,912 nuisances. These nuisances were referred to the Prosecuting Inspectors for re-inspection, and where necessary, further proceedings were taken to cause the abatement of the nuisance. The remaining 3,834 nuisances came within the province of other departments, and were referred to those departments to be dealt with.

In addition to the foregoing, the Inspectors, in the course of house to house inspection, discovered 68,173 nuisances, to remedy which preliminary notices were served on either the owner or the occupier. A number of defects were also referred to other departments.

On re-inspection, the number found not abated was 19,179, and statutory notices were served to remedy them. These were again re-inspected by the District Inspectors, and those found not abated were referred to the Prosecuting Inspectors for further action. In addition, all nuisances found in process of being abated, or to which the District Inspector was unable to gain access for re-inspection, were referred to the Prosecuting Inspectors,

The following table shows the number of nuisances found by the District Sanitary Inspectors, and the character of the proceedings taken by the Prosecuting Sanitary Inspectors to abate the nuisances, and the results:—

Number of complaints made by inhabitants	...	...	...	18,934
„ nuisances discovered on above complaints	...	...	...	28,746
„ „ „ on house to house inspection	...	...	...	68,173
Total nuisances				96,919
„ notices issued (Owners)	...	...	...	64,843
„ „ (Occupiers)	...	...	...	755
Total notices				65,598
„ notes to complainants	...	...	...	99
„ visits to premises under observation	...	...	...	962
„ incidental calls	...	...	...	22,281
„ special nuisances referred to Prosecuting Inspectors	...	...	...	24,912
„ ordinary nuisances referred to Prosecuting Inspectors	...	...	...	16,710
Total				41,622
„ visits made by Prosecuting Inspectors, <i>re</i> special reports	...	...	...	45,301
„ visits made by Prosecuting Inspectors, <i>re</i> ordinary reports	...	...	...	31,597
Total				76,898
„ re-inspection of nuisances	...	...	...	121,549
„ nuisances abated on first re-inspection	...	...	...	42,087
„ notes sent to comply with notices	...	...	...	5,047
„ re-tests of drains after compliance with notices	...	...	...	14
„ Informations laid	...	...	...	137
„ Magistrates' Orders	...	...	...	107
„ fined	...	...	...	5
„ acquitted or withdrawn...	...	...	...	15

The nuisances dealt with comprise, mainly, defective and choked drains, sink waste pipes and spouts; defective roofs; defective flagging and paving; defective water-closet basins, putty joints, walls, floors, seats and doors; defective or dirty cisterns; defective supply pipes; insufficient or no supply of water; defective chimney flues; offensive matter, animals or poultry on premises; also dirty floors, etc.

REFERENCES FROM OTHER DEPARTMENTS.

The references from the other departments, mainly comprised insanitary conditions discovered by officers belonging to those departments, but with which it was not within their province to deal.

Received from Education Department	...	..	...	7,222
,, City Engineer...	...	...	...	4,554
,, Water Engineer	...	...	...	6,683
,, Lodging House Inspectors	...	...	...	10,146

The references from the Education Department relate to school children said to be suffering from Measles, Whooping Cough, Ringworm, skin diseases, neglect, etc.

REFERENCES TO OTHER DEPARTMENTS.

The number of matters referred to other departments was:—

Referred to City Engineer	...	...	...	...	10,224
,, Building Surveyor	...	...	...	...	6,221
,, Water Engineer	...	...	...	...	10,320
,, Education Department	...	...	...	...	16,405

The references to the Water Engineer comprise mainly defective fittings, resulting in waste of water; also cases in which the supply was insufficient owing to various causes.

The references to the City Engineer consist principally of choked main drains and street gullies, and defective street and passage pavements; the references to the Building Surveyor concern dangerous walls, floors, roofs, &c.

The references to the Education Department chiefly relate to children from infected houses who are attending school.

SPECIAL VISITS.

Number of visits to railway carriages	...	...	...	716
„ „ „ platforms (fish arrivals)	...	...	...	141
„ „ poultry depots	...	...	...	597
„ „ manure depots	...	...	...	414
„ „ marine stores	...	...	...	1,380
„ „ fried fish shops	...	...	...	1,474

EXAMINATION OF CELLARS AND CELLAR DWELLINGS

Number of inspections of street cellars	...	...	...	17,628
„ found illegally occupied	...	...	...	84
„ of inspections of court cellars	...	...	...	640
„ found illegally occupied	...	...	...	—
„ of notices issued to cease letting or occupying	...	...	...	204

HOUSE TO HOUSE INSPECTION.

The following table indicates the results of the systematic house-to-house visitation by the District Male Staff:—

Number of street houses examined	...	...	...	135,541
„ court houses examined	...	...	...	1,809
Total	...	...	...	137,350
Number of apartments examined	...	...	...	698,029
„ houses where nuisances existed	...	...	...	11,820

INFECTED HOUSES.

The following table shows the number of houses visited where notifiable infectious diseases had occurred; also the number of visits to these houses, and to houses where cases of non-notifiable infectious diseases had been reported to the Department by the Education Department:—

Number of street houses where notifiable diseases occurred	12,224
„ court houses where notifiable diseases occurred	209
„ visits to infected houses and cellars (notifiable cases)	14,865
„ visits to infected houses and cellars (School cases)	5,778
„ visits and re-visits to Phthisis cases	8,216
„ enquiries <i>re</i> suspected Smallpox contacts	3,711
„ of other enquiries	559

COURT AND ALLEY EXAMINATIONS.

Number of inspections of Courts and Alleys	...	...	17,984
„ „ „ „ water-closets	...	...	35,725
„ „ water-closets found dirty, but cleansed by Officer's instructions	...	...	22,184

Special and systematic visits to courts and alleys are made with the object of ensuring the cleanliness of the domestic offices and the surface of the courts. The aim is to keep the courts and alleys uniformly clean throughout the week, and with this view the district inspectors are instructed that every tenant in each court is in turn to be held responsible for the cleanliness of the water-closets for a period of one week; the inspector records in his visiting book whose turn it is, and duly informs that tenant.

In 1890 there were 2,165 courts and alleys in the City, this number has been reduced to 386, and shows a diminution of 1,779 courts and alleys.

The exteriors of all courts and alleys are limewashed as often as may be necessary.

Number of exteriors of courts and alleys requiring limewashing	...	...	...	...	590
„ „ exteriors of houses requiring limewashing	...	...	...	...	2,271
„ „ interiors of water-closets requiring limewashing	...	...	...	...	986
„ „ notices issued to limewash	...	...	...	...	402

SMOKE NUISANCES.

Proceedings for the abatement of nuisances caused by the emission of excessive smoke from factories, steamers and steam waggons were taken under the following Acts, from January to March:—

The Liverpool Sanitary Amendment Act, 1854, Sections 24 and 25.

The Liverpool Improvement Act, 1882, Section 77.

The Liverpool Corporation Act, 1902, Section 57.

The Liverpool Corporation (General Powers) Act, 1905, Section 7.

The Highways and Locomotives (Amendment) Act, 1878, Section 32.

On and after April 1st proceedings were taken under:—

The Liverpool Corporation Act, 1921, Sections 472 and 473.

The Highways and Locomotives (Amendment) Act, 1878, Section 32.

REPORTS OF EXCESSIVE SMOKE.

Number of reports <i>re</i> Factories	...	...	...	...	52
„ „ „ Steamers in river	...	...	...	...	16
„ „ „ Steamers in dock	...	...	...	...	26
„ „ „ Steam Waggons	...	...	...	...	5
Total ..					99

Admonished by the Health Committee or written to in respect to nuisances caused by the emission of excessive smoke:—

Manufacturers	...	...	...	...	...	...	...	15
Steamship Owners	...	...	...	...	...	...	...	35
Steam Waggon Owners	...	...	...	...	...	...	...	2
Total ...								52

Number of Cautions to Manufacturers	...	...	...	...	611
„ „ „ Steamship Owners	...	...	...	...	71
„ „ „ Steam Waggon Owners	...	...	...	...	15
Total ...					697

INFORMATIONS FOR EXCESSIVE SMOKE.

Informations against Occupiers of Factories	...	...	...	54
„ „ „ Owners of Steamers in river	...	...	...	13
„ „ „ Owners of Steamers in dock	...	...	...	3
„ „ „ Owners of Steam Waggons	...	...	...	4
Total ...				74

Acquitted or withdrawn—Factories	...	...	...	...	5
„ „ Steamers	...	...	...	...	0
„ „ Steam Waggons	...	...	...	...	1
				Total	6

Number of Fines—Factories	...	...	...	...	49
„ „ Steamers	...	...	...	...	16
„ „ Steam Waggons	...	...	...	...	3
				Total	68

Amount of Fines—Factories	...	...	...	...	£34 0 0
„ „ Steamers	...	...	...	...	6 14 0
„ „ Steam Waggons	...	...	...	...	2 0 0
				Total	£42 14 0

It is the duty of the Police to deal with nuisances arising from the emission of smoke from domestic chimneys.

SMOKE INSPECTION.

The number of complaints received relating to defective house flues is still considerably on the increase. This is undoubtedly one of the after-effects of the war-period, during which time little or no attempt was made to keep house property in a proper state of repair.

Complaints received of nuisances caused by smoke from the defective state of house flues, low chimneys, etc.	...	716
Visits relating to same	...	4,556

Chimneys raised in consequence of complaints received	...	55
Flues altered or repaired	...	589
Complaints under observation	...	35
Complaints referred to other departments	...	10
Complaints not sustained	...	27
Total complaints	...	716

The smoke in our atmosphere is very largely contributed to by the combustion of coal in domestic firegrates, steam boiler furnaces, and other furnaces used for manufacturing purposes (see page 215).

It is a common error to lay the blame of the pollution of the atmosphere by smoke entirely upon the factory chimney; and this is no doubt due to the fact that it is more easily noticeable than the individual small quantities of smoke emitted from dwelling-house chimneys. These latter emit a considerable quantity in the aggregate.

Out of 42 cases of excessive smoke from steamers, 26 related to foreign trading steamers in dock. No proceedings were taken on this account, but the owners were communicated with in respect to the nuisance.

SMOKE ABATEMENT.

The past year has been one of general depression with regard to trade. Many factories were closed during a portion of the year, whilst others have only been working part-time.

The difficulty of obtaining adequate supplies of fuel of a fair quality has been overcome, and boiler plants are working with greater efficiency. This has been particularly noticeable with regard to steam-waggons, which are now giving little or no cause for complaint with respect to smoke.

The duties of Inspectors have been lightened to some extent in this way, but the number of complaints with respect to defective house flues has considerably increased, being almost double that of the previous year.

OFFENSIVE TRADES.

The number of inspections of premises where offensive trades are carried on was 1,428.

Number of Applications for permission to carry on Offensive								
Trade	...	...	...	...	...	...	...	3
Number of Applications granted				...	...	...	...	3
„	„	refused		...	...	..	...	—

In cases in which permission is granted, conditions are imposed requiring that the premises be put in order to the satisfaction of the

City Engineer, Building Surveyor and Medical Officer of Health, that no public or private nuisance be caused, and that the business be discontinued whenever the Council shall so require.

DETAILS OF VISITS.

Number of visits to	Bone Boilers	...	...	...	...	52
„	Bone Stores	...	...	...	...	69
„	Destructors	...	...	...	...	8
„	Dripping Factories	...	...	...	...	136
„	Fat and Tallow Melters...	...	...	...	...	249
„	Fellmongers	...	...	...	...	18
„	Fertiliser Works	...	...	...	...	23
„	Fish Oil Works	...	...	...	...	17
„	Gut Scrapers	...	...	..	...	150
„	Ham Cooking and Potted Meat Works..					4
„	Hide and Skin Works	...	...	...	...	33
„	Knackers' Yards	...	...	...	...	67
„	Lard Refiners	...	...	...	...	11
„	Marine Stores	...	...	...	...	2
„	Oil Refining	...	...	...	...	55
„	Oleo-Margarine Works	...	...	...	...	17
„	Paint and Resin Works...	...	...	...	...	12
„	Palm Oil Works	...	...	...	...	4
„	Patent Manure Works	...	...	...	...	4
„	Rabbit Skin Stores	...	...	...	...	13
„	Soap Boilers	...	...	...	...	278
„	Sulphuric Acid Works	...	...	...	...	1
„	Tanneries	...	...	...	...	74
„	Tar and Naphtha Works	...	...	...	...	14
„	Tripe Boilers	...	...	...	...	115
„	Turpentine Works	...	..	...	...	2
Total						1,428

INSPECTION OF STABLES AND REMOVAL OF MANURE.

Attention has been given to the inspection of stables and the necessity for the frequent removal of manure emphasised.

The number of visits to stables was 12,261, and the number of disinfections of middensteads was 16,190.

The middensteads are sprayed with lime after being emptied.

Administration of the Factory and Workshop Act, 1901, in
connection with
FACTORIES, WORKSHOPS, WORKPLACES & HOMEWORK

The following Tables are prepared by request of the Secretary of State :—

1.—Inspection of Factories Workshops and Workplaces.
Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises.	Number of		
	Inspections.	Written Notices	Prosecutions.
<i>Factories</i> (Including Factory Laundries.)	2,605	232	—
<i>Workshops</i> (Including Workshop Laundries).	8,655	762	—
<i>Workplaces</i> (Other than Outworkers' premises in- cluded in Part 3 of this Report.)	696	49	—
TOTAL	11,956	1,043	—

2.—Defects Found in Factories, Workshops and Workplaces.

Particulars.	Number of Defects.			Number of Prosecu- tions.
	Found.	Remedied.	Referred to H.M. Inspector.	
<i>Nuisances under the Public Health Acts :*</i>				
Want of cleanliness	311	311	—	—
Want of ventilation	8	8	—	—
Overcrowding	—	—	—	—
Want of drainage of floors	—	—	—	—
Other nuisances	374	374	—	—
Sanitary accommodation—				
Insufficient	20	20	—	—
Unsuitable or defective	328	328	—	—
Not separate for sexes	23	23	—	—
<i>Offences under the Factory and Workshop Acts :—</i>				
Illegal occupation of underground bakehouse (s. 101)... ..	2	2	—	—
Breach of special sanitary require- ments for bakehouses (ss.97 to 100)	1	1	—	—
Other offences (Excluding offences relating to outwork which are included in Part 3 of this Report)	—	—	—	—
TOTAL	1,067	1,067	—	—

*Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act, 1901, as remediable under the Public Health Acts.

3.—Home Work.

NATURE OF WORK.	OUTWORKERS' LISTS, SECTION 107.										OUTWORK IN UNWHOLE SOME PREMISES, SECTION 108.			OUTWORK IN INFECTED PREMISES, SECTIONS 109, 110.		
	Lists received from Employers.															
	Twice in the year.										Once in the year.					
	a Lists.	a Contractors.	a Workmen.	a Lists.	a Contractors.	a Workmen.	Notices served on Occupiers as to keeping or sending Lists.	Failing to keep or permit inspection of Lists.	Failing to send Lists.	Prosecutions.	Instances.	Notices served.	Prosecutions.	Instances.	Orders made (S. 110).	Prosecutions (Sections 109, 110).
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
* Wearing Apparel.....	386	1,151	294	14	35	3	25	—	—	—	—	—	—	—	—	—
Household linen	2	12	30	—	—	—	—	—	—	—	—	—	—	—	—	—
Curtains, etc.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Furniture, etc.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Electro-Plate	2	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Brass and brass articles.....	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—
Umbrellas, etc.	2	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paper Bags, etc.	2	4	10	—	—	—	—	—	—	—	—	—	—	—	—	—
Fur Pulling	2	4	2	—	—	—	—	—	—	—	—	—	—	—	—	—
Cardboard or Paper Box Making	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Basket Making	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Any Process incidental to above.....	2	36	2	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	398	1,219	340	14	35	3	25	—	—	—	—	—	—	—	—	—

* Several Employers give out work of more than one of the classes specified in column 1, and subdivide their lists in such a way as to show the number of workers in each class of work, the lists are included among those in column 2 (or 5 as the case may be) against the principal class only, but the outworkers are assigned in columns 3 and 4 (or 6 and 7) into their respective classes.

a The figures in columns 2, 3 and 4 are the total number of lists received from employers who comply strictly with the statutory duty of sending two lists each year and of entries of names of outworkers in those lists. The figures in columns 3 and 4 are (approximately) double of the number of individual outworkers whose names are given, since in the February and August lists of the same employer the same outworker's name is often repeated.

4.—Registered Workshops.

Workshops on the Register (S. 131) at the end of the year.	Number.
Workshops	3,312
Cooking Kitchens of Restaurants	353
Bakehouses	628
Total number on Register	4,293

5.—Other Matters.

Class.	Number.
Matters notified to H.M. Inspector of Factories:— Failure to affix Abstract of the Factory and Workshop Acts (S. 133, 1901)	45
Action taken in matters referred by { H.M. Inspector as remediable { under the Public Health Acts, but { not under the Factory and Work- { shop Acts (S. 5, 1901)	136
Other	136
Underground Bakehouses (S. 101) : — In use at the end of year	110

FACTORY AND WORKSHOP ACT, 1901.

BAKEHOUSES.

The sanitary control of Bakehouses is dealt with under the Factory and Workshop Act and the Public Health Acts.

During the year 1,992 visits were paid to bakehouses.

Number of Bakehouses on Register, 31st December, 1922 ...	628
---	-----

„	special visits to Bakehouses on complaints	...	36
„	ordinary visits to Bakehouses	... ..	1,601
„	re-inspections of incorrect premises	... ..	355
	Total visits	.. ...	<u>1,992</u>

„	occasions on which Bakehouses were found		
	incorrect	... ..	1,533
„	sanitary defects found	... ..	225
„	Notices issued	... ..	178

All the above notices were complied with by the owners or occupiers.

The number of visits paid to cooking kitchens of restaurants was 696 and 152 kitchens were found incorrect.

SHOPS ACTS, 1912 AND 1913.

During the year 644 complaints have been received, relating principally to the non-closing of shops on the weekly half-holiday.

AMBULANCE AND DISINFECTING STAFF.

There have been 4,358 infectious cases removed by officers of the Ambulance Staff to the Hospitals during the year.

The number of rooms stripped or sprayed was 3,190, and the number of rooms disinfected was 27,385. There were also 1,519 library books disinfected.

The number of articles (bedding, clothing, etc.) disinfected at the Disinfecting Apparatus was 78,609. In addition there were 125 bales (70 tons) of Hessian and 93 bales of Tailors' cuttings.

Two Disinfecting Stations have been established in the City for a number of years, each well equipped to deal with large quantities of material. The North End of the City is served by the Charters Street Station and the South End by the Smithdown Road Station. When necessary the disinfecting apparatus attached to each of the City Hospitals can be utilised.

DISINFECTION OF VERMINOUS PERSONS.

Typhus fever, which is a vermin-transmitted disease, is present in Poland and the neighbouring Continental countries; it has caused the Ministry of Health and also the American Health Authorities to view the arrival of emigrants and trans-migrants from these countries en route to America with some anxiety.

The Emigration houses where these people are housed, pending the sailing of the vessel, are kept under strict supervision by the Lodging-House Inspectors; they are visited daily, and all cases of infectious illness promptly reported to the Shipping Company's doctor and the Local Health Authority. The bedding is also frequently examined and attention is given to the occupation of the rooms to prevent overcrowding and to ensure cleanliness. The Medical Officer of Health, at the request of various Shipping Companies, arranged that certain Polish and other emigrants, together with their effects, should be bathed and disinfected.

The bathing of these persons has been carried out at the Netherfield Road and Sparrow Hall Hospitals, where an ample number of baths are available. The disinfectors of the hospitals, which are of large size, are, if necessary, utilised for the destruction of vermin in the clothing and belongings of these persons. The cost of the disinfection is defrayed by the Shipping Company concerned. As a rule, the alien immigrants and trans-migrants arriving in the Port of Liverpool on inward-bound vessels are in a clean condition, and do not require the cleansing referred to.

EXTERMINATION OF RATS.

A staff of rat-catchers is systematically employed in the destruction of rats.

The number of rats caught within the City was 17,219 (including those caught in sewers). Of this total 3,172 rats were sent to the City Bacteriologist for examination.

The removal of the foul deep ashpit from the rear of dwellings and the substitution of suitable covered galvanized bins, whilst providing a sanitary improvement, has also undoubtedly been a material factor in the removal of rats from the proximity to dwellings.

There are special reasons for a constant campaign against rats in Liverpool. The first is the possibility of the spread of plague, a disease which from time to time is, and will continue to be, brought into the Port. The destruction and damage to valuable property, foodstuffs, etc., by means of rats, further justify the stringent measures taken in Liverpool at all times against these vermin, and the maintenance of the special staffs employed by the Health Committee to effect their extermination. In this connection, the co-operation of warehouse owners, and so forth, is always sought and obtained.

Active methods and measures were continued in the more modern warehouses to render the buildings rat-proof or to diminish harbourage and to make nesting difficult. The risk of infection of a district is gauged by the amount of feeding and harbourage afforded to the rats.

With regard to the methods of trapping, the bird-lime tray is quite as effective as any other method, and in regard to poisons it is difficult to say whether one poison has an advantage over another. Barium carbonate is believed by many to be very effective, and is relatively non-poisonous to domestic animals.

BACTERIOLOGICAL EXAMINATION OF RATS.

During the year, the usual examination of rats for plague infection was carried out (see page 201).

The following statement shows the number of rats caught and examined or destroyed in the City during the year:—

Number of rats caught in warehouses, stores, etc....	...	5,018
„ „ „ sewers ... ..	...	5,689
„ „ obtained from other sources ... ..	...	6,512
		<hr/> 17,219
Number of rats submitted for bacteriological examination		3,172
„ „ „ other examination		2
„ „ destroyed		14,045

MORTUARIES.

The Mortuary at the Prince's Dock is for the reception of the bodies of persons who have been drowned, killed or found dead, and upon which the Coroner desires to hold Inquests. Bodies are taken to this Mortuary by the Police, and when it is necessary to make post-mortem examinations.

BODIES REMOVED TO PRINCE'S DOCK MORTUARY.

Number from River.	Number from City.	Total.
17	380	397

The method of transport of the bodies of persons killed, or found dead in the street, has been adequately provided for, the Health Committee having arranged, through the Chief Constable, with a firm of undertakers to supply a hearse on short notice, together with a shell coffin. This arrangement has proved satisfactory.

BODIES REMOVED TO FORD STREET MORTUARY AND DISTRICT MORTUARIES.

Green Lane.	Lark Lane.	Ford Street.	Total.
—	—	455	455

The District Mortuaries are seldom used. For the convenience of juries, as well as for other reasons, it is preferable that bodies should be conveyed to the Central Mortuaries. The Ford Street Mortuary is provided for the reception of bodies which cannot be kept at the homes in which death had taken place, without possible injury to the health of the inmates. It is also used for the reception of stillbirths.

REMOVAL OF HUMAN REMAINS FROM DISUSED BURIAL GROUNDS.

SAINT PETER'S CHURCHYARD, CHURCH STREET.

During the year, the Ecclesiastical Commissioners having decided to demolish the above Church, and to sell the site for commercial purposes, it was necessary for them to remove the existing human remains. The work of disinterment commenced at the beginning of the year, 2,536 graves were opened, and a total of 9,998 human remains were removed and re-interred at Walton Park Cemetery, Yew Tree Road. The work was carried out in a very satisfactory manner, and without giving rise to adverse comment or complaint.

The disposal of the site afforded the opportunity for much-needed street widening.

Work of disinterment commenced	...	5th December, 1921.
„ „ completed	...	4th September, 1922.

SUMMARY.

Number of Graves	...	...	...	2,536
Number of Human Remains disinterred	...	...	...	9,998
Number of Shells used	...	...	...	6,078

JEWISH BURIAL GROUND, UPPER FREDERICK STREET.

This burial ground is situated at the rear of No. 133, Upper Frederick Street, and 23 human remains were disinterred.

Work commenced	...	27th December, 1922,
„ completed	...	8th January, 1923.

Average depth excavated to virgin soil, 7 ft. 6 in.

Remains with earth from about same were re-coffined and removed during the early mornings to the Jewish Cemetery, Broadgreen, for re-interment.

The operations were carried out having due regard to decency and so as not to be a nuisance.

CREMATORIUM.

The Crematorium is situated in Anfield Cemetery, and was opened by the Liverpool Crematorium Company in the year 1896. When the Corporation became the Burial Authority for the City, the administration was taken over in October, 1908, by the Crematorium Sub-Committee.

The number of cremations which have taken place since the opening is shown in the following table:—

1896.....	2	1911.....	50
1897.....	10	1912.....	52
1898.....	27	1913.....	66
1899.....	23	1914.....	49
1900.....	40	1915.....	53
1901.....	40	1916.....	58
1902.....	54	1917.....	62
1903.....	35	1918.....	70
1904.....	40	1919.....	88
1905.....	35	1920.....	70
1906.....	46	1921.....	74
1907.....	34	1922.....	74
1908.....	32		—
1909.....	46		1,267
1910.....	37		—

CINEMATOGRAPHS.

The premises licensed by the City Justices have been systematically visited throughout the year, 279 visits having been paid. The visits have been mainly at night, but day inspections have also been made.

Attention has been directed to the ventilation of the auditorium, sanitary convenience and cleanliness, and generally speaking the premises are kept in a satisfactory condition.

COMMON LODGING HOUSES.

In the year 1866 there were 1,278 Common Lodging Houses on the Register. These houses were registered under the Liverpool Sanitary Act, 1844, and the Common Lodging Houses Acts of 1851 and 1853.

Bye-laws were made in 1848 and 1860 to regulate such houses. These bye-laws were repealed in 1869, when new bye-laws were made under powers given by the Common Lodging Houses Acts of 1851 and 1853, and confirmed by the Public Health Act, 1875, Sec. 326, and these remain in force at the present time.

During the year 1867 all Common Lodging Houses not having a separate day room for the use of lodgers, and all houses taking lodgers in and not having this accommodation, were registered as Sub-Let Houses. The cubic space required in Common Lodging Houses was 300 cubic feet per head at that time, as against 400 cubic feet at present.

Further powers to deal with Common Lodging Houses are given under Part 5 of the Public Health Acts Amendment Act, 1907 (adopted in 1912), Sections 69 to 75, particulars of which will be found in the Annual Report for 1913.

Under Sections 69 to 72 of the above Act, 68 keepers were re-registered and 4 deputy-keepers were registered.

The Liverpool Corporation Act, 1913, Section 36 (details of which will be found in the Annual Report for 1913), deals with keepers who induce persons suffering from trachoma or other contagious diseases of the eye to become lodgers in a lodging-house.

The Annual Report for 1913 contains a list showing the number of Common Lodging Houses added to and removed from the Register since 1866.

INSPECTION OF LODGING HOUSES

Lodging-houses on Register, December 31st, 1921	...	...	183
„ removed from Register during 1922	...	...	22
„ added to the Register during 1922	...	...	10
„ on Register, December 31st, 1922	...	...	171

These houses provide accommodation for 7,196 lodgers.

Visits by Day	...	...	...	...	...	...	6,597
„ Night	...	...	...	...	...	...	654

There were 175 special visits, *re* notified cases of Phthisis, included in the above.

Two informations were laid against a keeper for not limewashing the walls and ceilings of his Lodging Houses, resulting in a fine of 10s. in each case.

There are 21 houses providing accommodation for 698 women lodgers. For details of Women's Lodging Houses see Reports for the years 1909 and 1914.

SEAMEN'S LICENSED LODGING-HOUSES.

The Corporation have made Bye-laws, with the sanction of the President of the Board of Trade, for the licensing of Seamen's Lodging Houses, under the Merchant Shipping (Fishing Boats) Act, 1883, Section 48.

Applications from the keepers of Registered Common Lodging Houses for licenses authorising the designation of such Registered Common Lodging Houses as Seamen's Licensed Lodging Houses, are infrequent, only three such licensed houses now being on the register, providing accommodation for 63 seamen.

The number of licenses granted since the adoption of the Seamen's Lodging House Bye-laws is 33.

It has not been found necessary to institute proceedings under the bye-laws in question.

Some years ago the holders of licenses to keep Seamen's Lodging Houses were authorised by the Board of Trade to board vessels and seek for lodgers, and while this privilege was granted there was an advantage in holding such a license, but that privilege being now withdrawn it does not appear that there is any advantage to the keeper of a Common Lodging House to have his premises registered as a Seamen's Lodging House, hence, probably, the small number upon the register.

HOUSES LET IN LODGINGS.

(SUB-LET HOUSES.)

Overcrowding in sub-let houses was first dealt with under the Nuisance Removal Act, 1855.

The first bye-laws made to deal with these houses were confirmed by the Secretary of State, November, 1866, under Powers given by the Liverpool Sanitary Act of 1866, Section 35. These bye-laws required only 300 cubic feet for an adult person if the room was used as a sleeping apartment only, and 350 cubic feet if used as a combined room, *i.e.*, without a separate day-room. Every person above the age of 15 years was considered an adult and two persons between the ages of 6 years and 15 years were considered one adult. No provision was made for cubic space for persons below 6 years occupying a room as a sleeping apartment, with or without their parents.

These bye-laws were amended in 1869 under the Act of 1866, and further amended in 1885 and 1886 under the Public Health Act, 1875, Section 90. Further amendments were made in 1901 requiring 400 cubic feet for each adult person and 200 cubic feet for every person below 10 years. Powers were also given to deal with non-separation of sexes in lodgers' rooms and to enforce the cleansing of stairs and passages used in common.

These bye-laws were amended in 1911, and additional powers were given requiring 400 cubic feet for *each* person occupying a room which is not exclusively used for sleeping purposes, the separation of the sexes, in rooms occupied by the tenant's family, or in rooms over which he retains possession or control. Lodgers are made responsible for overcrowding, and for the separation of sexes, in rooms let to them, and for the cleansing of the floors, and for the cleansing of the stairs, passages, and landings used exclusively by them.

Powers were also given to enforce the provision of water-closet accommodation (one water-closet for every twelve persons), the lime-washing of walls and ceilings of houses, yards and water-closets at stated intervals.

INSPECTION OF HOUSES LET IN LODGINGS.

Houses on Register, December 31st, 1921	...	...	...	15,332
„ removed from Register during 1922	...	...	...	20
„ added to Register during 1922	...	...	...	490
„ on Register, December 31st, 1922	...	...	...	15,802

DAY VISITS :

Day visits	...	...	...	...	...	110,445
Rooms measured	...	...	...	...	...	2,439
Floors found dirty	...	...	...	...	...	263
Floors found cleansed on revisit	...	...	...	...	...	250
Stairs and passages dirty	...	...	...	...	...	41
Stairs and passages found cleansed on revisit	...	...	...	...	...	40

Informations were laid for breaches of the bye-laws as follows :—

Not washing floors	...	...	...	...	...	50
Not sweeping floors	...	...	...	...	...	9
Not cleansing stairs, passages	...	...	...	...	...	7

NIGHT VISITS :

Night visits (between 11-45 p.m. and 2 a.m.)	...	...	...	...	...	23,910
Number of nights on duty	...	...	...	...	...	127
Cases of overcrowding found	...	...	...	...	...	926
Visits to instruct how to re-arrange so as to abate overcrowding	...	...	...	...	...	799
Cases of overcrowding abated on re-inspection	...	...	...	...	...	909
Informations laid for overcrowding	...	...	...	...	...	57
Convictions for overcrowding	...	...	...	...	...	50
Discharged	...	...	...	...	...	4
Withdrawn	...	...	...	...	...	3

DETAILS OF OVERCROWDING :

Overcrowding by families occupying 1 room	...	...	...	151
„ „ „ 2 rooms	...	...	...	471
„ „ „ 3 or more rooms	...	...	...	263

NON-SEPARATION OF SEXES :

Cases found	...	...	...	...	...	162
Visits to instruct how to re-arrange so as to separate the sexes	...	...	...	...	...	137
Cases abated on re-inspection	...	...	...	...	...	155
Informations laid	...	...	...	...	...	30
Convictions	...	...	...	...	...	25
Discharged	...	...	...	...	...	4
Summons not served	...	...	...	...	...	1

During the year the Department has been instrumental in finding other accommodation for lodgers' families occupying overcrowded and indecently occupied rooms and for persons ordered by the tenant to give up possession of their rooms.

CLEANSING OF WALLS AND CEILINGS.

During the year the following Notices were served on Landlords of houses let in lodgings under Section 7 of the 1911 Bye Laws:—

Preliminary notices to cleanse walls and ceilings ...	...	19
Houses cleansed ...	...	11
Rooms cleansed ...	...	109

The following table shows the number of Houses let in Lodgings on the Register, together with the number of visits for the prevention of overcrowding for the past 10 years:—

Year.	No. of Houses let in Lodgings on Register.	No. of night visits for prevention of overcrowding.	No. of convictions for overcrowding.	Percentage of convictions to number of visits.
1913	16,405	22,938	660	2·87
1914	16,492	24,309	693	2·85
1915	16,626	21,659	595	2·74
1916	16,827	22,199	636	2·86
1917	16,635	21,746	508	2·33
1918	16,870	19,524	220	1·12
1919	14,636	23,350	191	0·81
1920	15,080	24,596	85	0·34
1921	15,332	24,851	45	0·18
1922	15,802	23,910	50	0·20

The Annual Report for 1913, contains a list shewing the number of "Houses let in Lodgings," added to and removed from the Register since 1866.

CANAL BOATS ACTS, 1877 and 1884.

The Leeds and Liverpool Canal Company are the proprietors of the only canal having direct communication with Liverpool, and the length of the waterway within the City, exclusive of locks which lead to the docks, is about three miles.

The number of inspections of canal boats during the year was 4,283 and the condition of the boats and their occupants as regards matters dealt with in the Acts and Regulations is indicated in the following information:—

Boats on Register, 1st January, 1922	...	...	...	376
New Boats registered	...	...	...	1
Boats removed from Register:—				
Broken up	...	...	...	12
Left the district	...	...	...	2
Not used as dwellings	...	...	...	7
			—	21
Boats on Register, 31st December, 1922	...	...	...	356
„ not seen in the district	...	...	...	96
„ regularly plying on the Canal	...	...	...	261
„ re-registered on account of change of owners	...	...	...	8
„ re-registered on account of change of owners and name of boat	...	...	...	6
Copy of Certificate of registration re-issued	...	...	...	1
Boats on which contraventions occurred	...	...	...	34*
Nature of contraventions—				
Unregistered boats used as dwellings	...	...	...	7
No certificate of registration on board	...	...	...	6
Registered lettering, &c., not legible	...	...	...	3
Leaky decks	...	...	...	11
Defective ventilation	...	...	...	4
„ bulkheads	...	...	...	2
„ stove	...	...	...	1
Cabins requiring re-painting	...	...	...	6
No water cask	...	...	...	1
Dirty condition of cabins	...	...	...	3

* Of this number 21 were registered by other Authorities.

Written notices were issued to Owners in 23 instances.

Verbal notices given to Owners in 5 instances.

Verbal Notices given to Masters in 8 instances.

No informations were laid during the year against Owners or Masters for infringements of the Acts and Regulations.

No cases of infectious sickness were reported as having occurred during the year on any canal boat visiting the district.

One motor-propelled boat is registered by this Authority.

DETAILS OF VISITS TO CANAL BOATS FOUND ON CANAL.

Three hundred and fifty-eight boats found plying on the Canal were visited. These boats are registered as follows :—

261 boats are registered at Liverpool.			
18	„	„	Runcorn.
15	„	„	Leigh.
13	„	„	Wigan.
4	„	„	Manchester.
6	„	„	Chester.
21	„	„	Blackburn.
2	„	„	Burnley.
1	„	„	Northwich.
1	„	„	Widnes.
16	„	„	Leeds.
<hr/>			
358			
<hr/>			

All of these boats are “Wide” boats—6 being propelled by steam, 27 steam-towed, 4 motor driven and the remainder horse drawn.

The number of inspections of these 358 boats was 3,685, and the population was as follows, viz. :—

Men	...	...	574
Women		...	173
Children		...	107
<hr/>			
Total	...		854 persons, detailed as follows :—
<hr/>			

Males over 14 years of age	...	...	...	...	574
Males over 5 years of age and under 14	...	...	...	...	12
Males under 5 years of age	...	...	...	...	57
Females over 12 years of age	...	...	...	...	173
Females over 5 years of age and under 12	...	...	...	...	3
Females under 5 years of age	...	...	...	...	35
Total	...	...	...	...	854

NOTE.—Males on attaining the age of 14 years, and females 12 years, living on Canal Boats become adults and are recorded as such in the above Table (Regulation III, Section 2, Canal Boats Act, 1877).

Fifteen children of school age were found on Canal Boats during the year, 4 were referred to the Education Authority, the remainder were on trips with their parents during the school holidays.

No boat was found on the Canal or River or in the Docks, with families on board who had not a home ashore in addition to that on the boat.

In 1898 the Canal Boat Inspectors were appointed as Port Sanitary Inspectors—an appointment which authorised them to inspect all classes of boats—as a difficulty arose in connection with certain boats plying upon the canal which were not registered under the Canal Boats Acts, but which had been registered by the Board of Trade under the Merchant Shipping Acts. One hundred inspections were made of boats of this class, and all were found correct.

In 1903 the Port Sanitary Inspectors were appointed as Canal Boat Inspectors. This appointment authorised them to inspect canal boats which ply to and from the docks and on the river. During the year, 598 inspections were made by these Inspectors, and they are included in the 4,283 visits made to Canal Boats. The number of contraventions for which written notices were served on the owners was 18 in connection with 13 boats.

SUPERVISION OF FOOD SUPPLIES.

The supervision of foodstuffs, which embraces meat, fish, fruit, vegetables, flour, tinned goods, provisions, etc., intended for human consumption, affecting as it does the health of the people, has engaged the serious consideration of the Medical Officer of Health.

The provisions of the Public Health Acts, 1875 and 1890, and the Liverpool Corporation Act, 1921, which impose on the Medical Officer of Health the duty of inspection and empowers him to seize unsound food, are efficiently carried out by a well qualified and experienced staff of Food Inspectors.

The City is divided into seven districts with an Inspector in charge of each, and the system in operation ensures the inspection of all meat, whether slaughtered within the City or sent in already prepared for sale from Birkenhead or country districts.

During the busy hours, viz., 7 a.m. to 10 a.m., at the Abattoirs and Meat Markets, it is now possible to have six and, if necessary, eight, Inspectors on duty. This ensures that all meat and organs are thoroughly inspected, and also that there is no delay in having the meat and organs passed as fit for food.

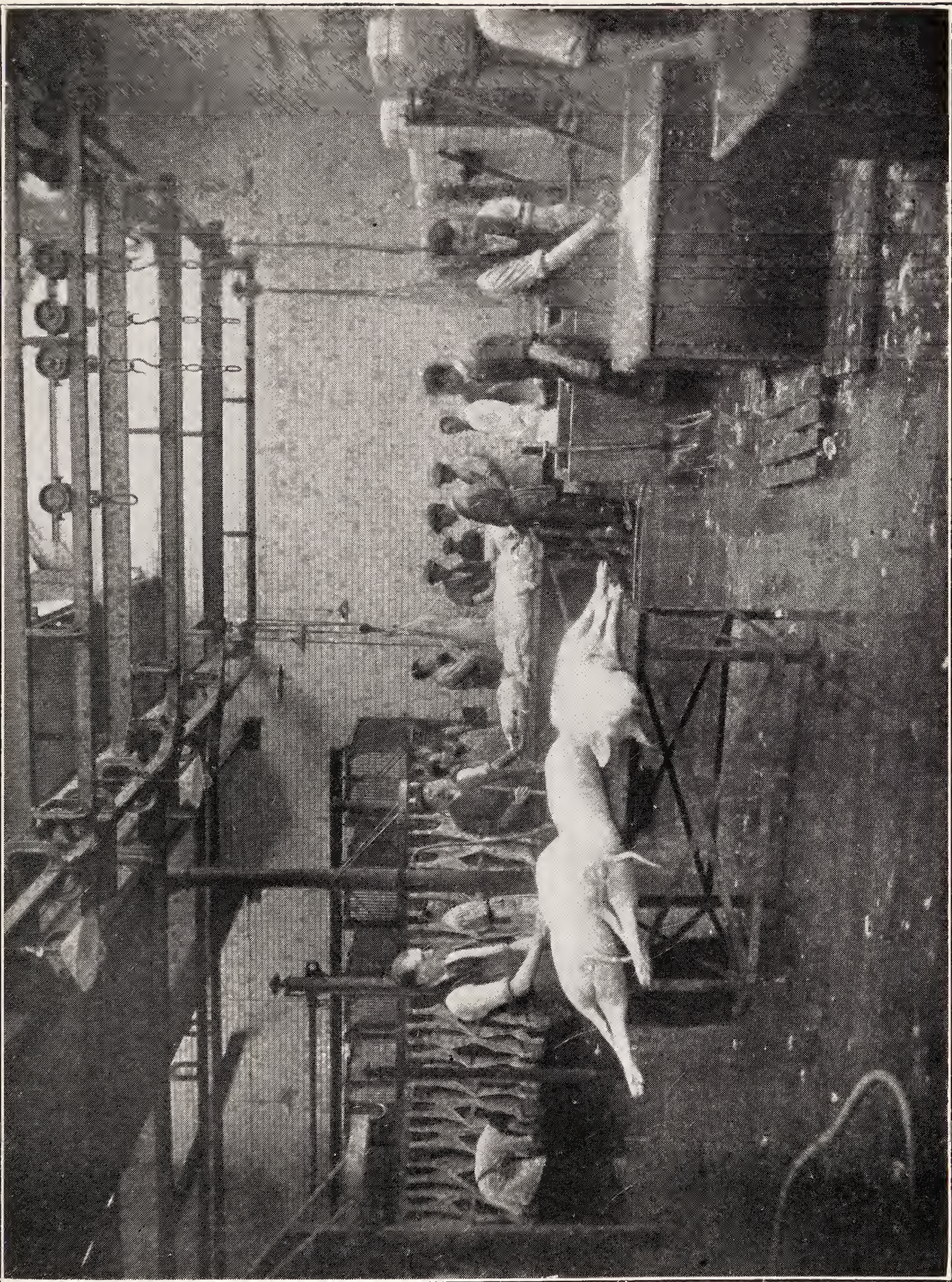
On account of the large number of animals slaughtered in preparation for the Monday trade, it has been found necessary to institute Sunday inspection at the Abattoirs. The numbers of animals slaughtered have reached as high as 1,547.

The necessity for the present organised system of food inspection will be appreciated by a perusal of the following figures. During the year 318,078 animals were slaughtered in the City, 111,208 carcasses were sent in dressed from Birkenhead and country districts, and 437,012 imported frozen and chilled carcasses were sold from Gill Street Market; of these, 897 carcasses were totally rejected, and 1,345 partially rejected, representing a weight of 433,183 lbs.

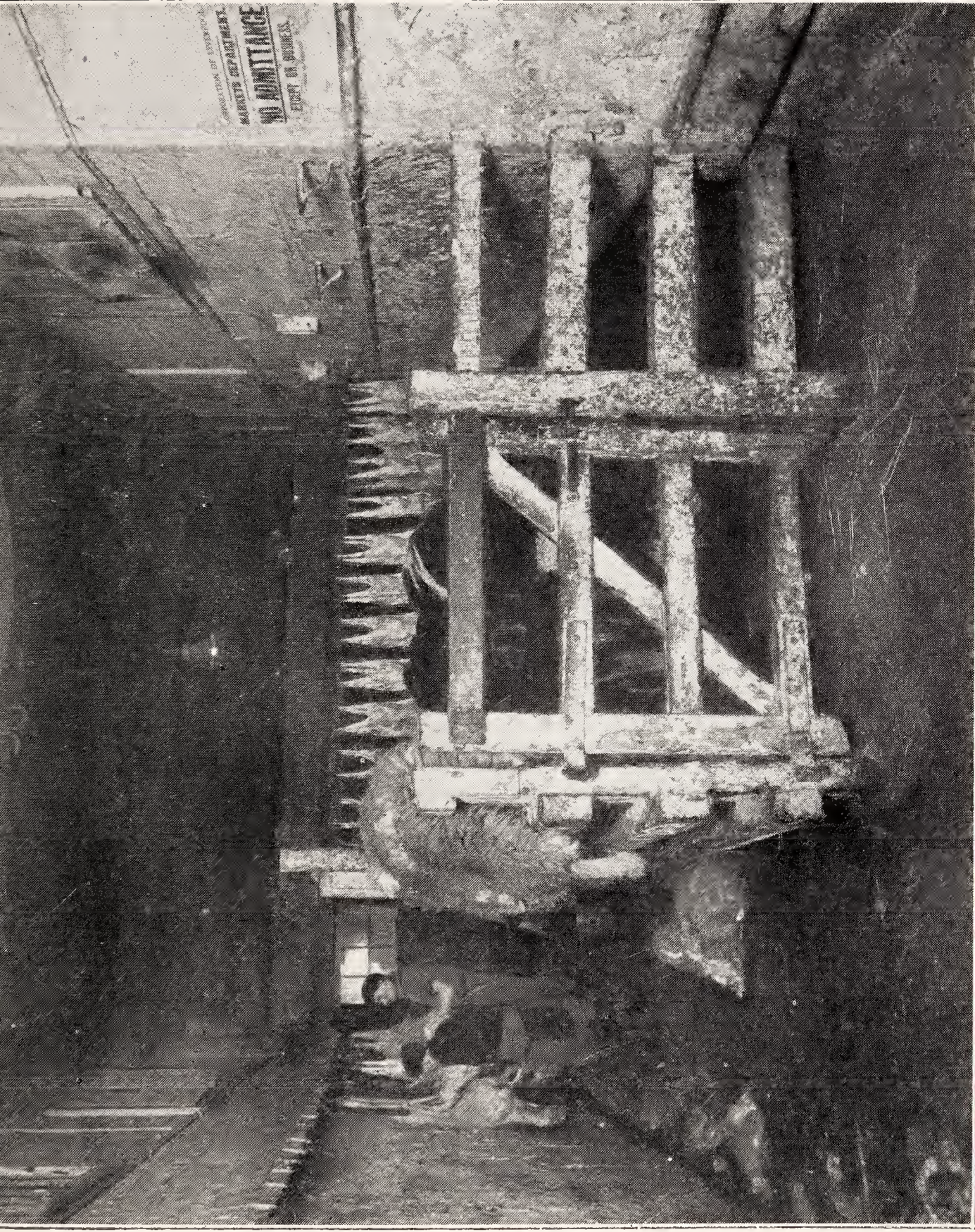
The duties have not been merely inspectorial, but efforts have been made to afford the trades generally information and assistance which



LIVERPOOL ABATTOIR.



EDINBURGH ABATTOIRS.—Pig Slaughter Hall.



LIVERPOOL ABATTOIR.

South end of Abattoir shewing pen for Live Cattle. Slaughtering and dressing of Sheep in 4-foot passage with Sheep Carcases prepared for sale in background. Live Cattle in Pen.

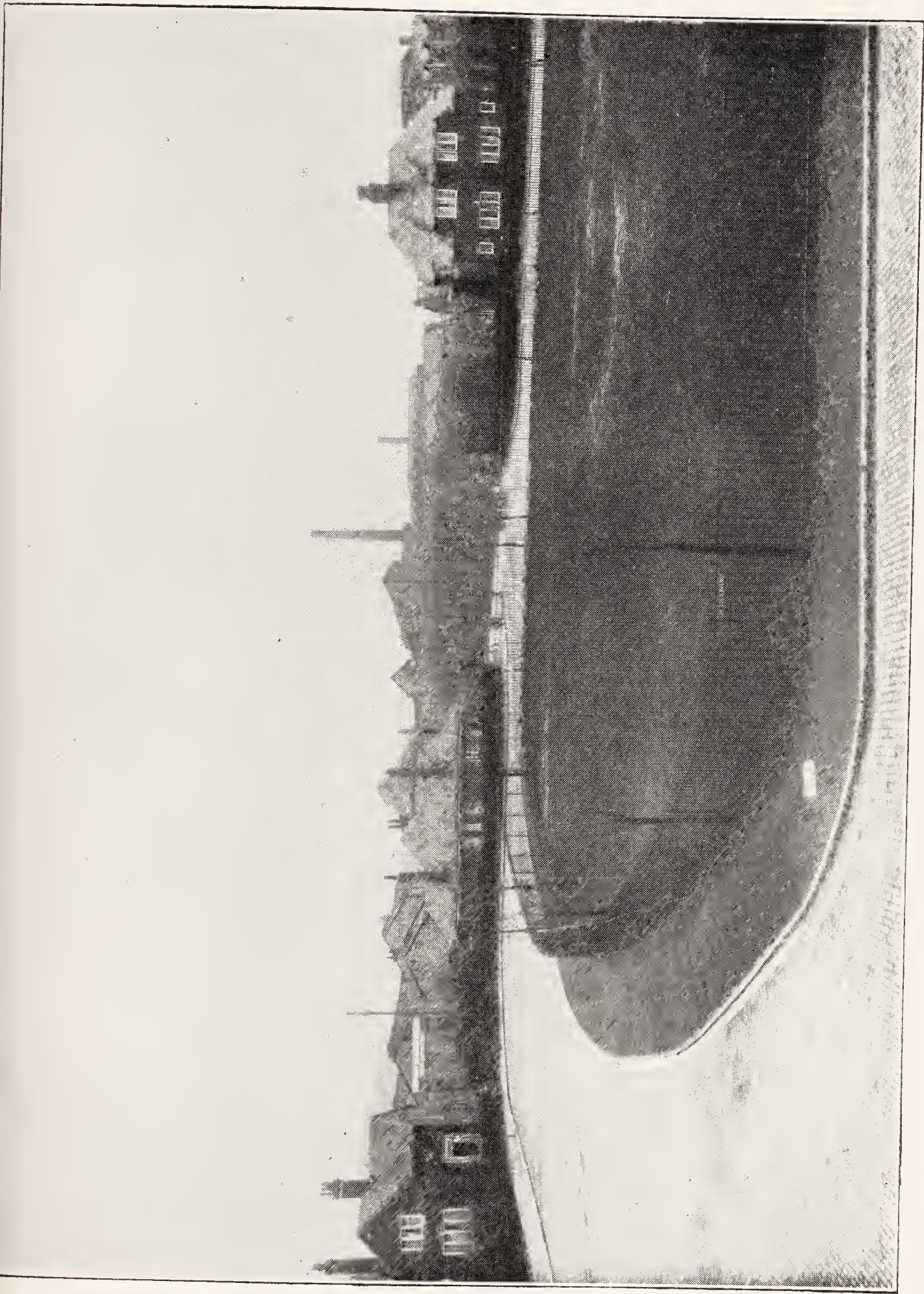


LIVERPOOL ABATTOIR.

General view of Slaughtering, Hanging and Selling Accommodation in North Section of Abattoir. Note Live Animal standing by an Animal just slaughtered and the process of disembowelling and dressing being carried on within a few inches of carcasses awaiting sale.



EDINBURGH ABATTOIRS.—Sheep Pens.



EDINBURGH ABATTOIRS.—View of Entrance, looking West.

would enable them to obviate the possibility of unsound food being sold to the public. The result of this co-operation between the trades and the inspectors has proved effective, and the system of food inspection has been rendered thereby more efficient.

The memorandum on Meat Inspection issued by the Minister of Health to Local Authorities and their Officers, has met with general approval, and it may be said that the inspection of food generally has never been more efficient than at the present time.

The system of food inspection at the Wholesale Fish and Fruit Markets is carried out in a similar manner to the Meat Markets, it being possible to add to the inspection staff engaged as the occasion arises.

ABATTOIRS.

There are 17 Private Slaughterhouses in the City in addition to the Central Abattoir.

The private slaughterhouses have been well conducted and kept in good condition. A number of the private slaughterhouses are situated in cramped and congested positions, and are not suitable places for the slaughter of animals, but, owing to the very congested and insanitary state of the Central Abattoir it has been found necessary to keep these places in use until such time as a new Public Abattoir is built commensurate with the trade of the City.

The accompanying illustrations show the marked contrast between a modern slaughterhouse as erected in Edinburgh and the arrangements existing in Liverpool at the present time. There can be no two opinions that the condition of affairs is highly detrimental to the prestige of this City.

The congested, insanitary and unsuitable position of the Public Abattoirs and Allied Trades remains the same as in previous years. Repairs have been carried out, but, as previously reported, no amount of repairing can make the building a suitable place in which to slaughter animals and sell the carcasses for human food. The only remedy lies in the erection of a modern abattoir and meat market in keeping with other branches of public health work in the City.

The Markets Committee have now before them a comprehensive scheme for the erection of a new Abattoir and Meat Market, with accommodation for the allied trades, on the existing Cattle Market site at Stanley, and also with accommodation on the Liverpool side of the Mersey for the landing of Irish and Canadian cattle.

The work under the Contagious Diseases of Animals Acts has been carried out by the Food Inspection Staff, but as from 1st July, 1923, this work will be handed over to the Veterinary Department together with the services of two inspectors, whose whole time will be taken up in carrying out the work. One inspector transferred to the Veterinary Department was solely engaged on Contagious Diseases of Animals work, the other was principally engaged in the work of Food Inspection, and it may be necessary in order to keep up the present high standard and important work of food inspection to appoint another inspector to the food inspection staff.

The shops and premises from which foodstuffs are sold have generally been kept in good condition, and the tendency to handle foodstuffs in a more hygienic manner is on the increase and greater efficiency will result when the Bye-laws are framed to prevent the exposure of foodstuffs in places where they will be liable to contamination by dust, flies, etc. The registration of all dealers, etc., in foodstuffs would be very desirable, and power to deal with this aspect might be asked for at the first opportunity.

The following table shows the number of private slaughterhouses in the City, viz. :—

SLAUGHTERHOUSES.

		1914	Dec. 1921	Dec. 1922
Registered	...	5	5	5
Licensed	...	13	12	* 12

* Three of the Licensed Slaughterhouses are used exclusively for the slaughtering of horses for export.

The following tables show the quantities of foodstuffs dealt with during the year :—

ANIMALS SLAUGHTERED FOR HUMAN FOOD IN THE CITY.

	Bulls.	Bullocks.	Cows.	Heifers.	Calves.	Sheep.	Lambs.	Swine.	Horses.
Public Abattoir	412	8,601	10,007	1,970	27,580	56,008	157,762	19,994	—
Private Slaught- ter-houses ...	3	387	737	118	1,591	1,032	4,330	25,626	1,920
TOTAL ...	415	8,988	10,744	2,088	29,171	57,040	162,092	45,620	1,920

Total number of animals slaughtered in the City = 318,078.

IMPORTED MEAT SOLD IN MEAT MARKETS.

	Cattle.	Calves.	Sheep.	Lambs.	Swine.
Abattoir (Irish and Birkenhead dressed)	11,400	5,169	38,136	48,961	7,542
Gill Street (Imported Frozen and Chilled)	44,712	176	173,103	214,580	4,441
Retail Shops	88	41	363	70	3,149
TOTAL	56,200	5,386	211,602	263,611	15,132

ANIMALS IMPORTED, SLAUGHTERED AND SOLD FROM THE
MEAT MARKETS AND PRIVATE SLAUGHTERHOUSES.

Cattle.	Calves.	Sheep.	Lambs.	Swine.
78,435	34,557	268,642	425,703	60,752

During 1922, 1,920 horses were slaughtered for export to France and Belgium. These carcasses were inspected and passed by the food inspector, with the exception of 56, which were rejected as unfit for human food.

**IMPORTED MEAT AND OFFAL SOLD IN BOXES AND BAGS
AT THE MEAT MARKETS.**

	Boxes and bags.
Abattoir (Irish and Birkenhead)	8,739
Gill Street (Frozen) Imported	35,645
TOTAL	44,384

During the year 2,282 fat cows from cowsheds in the City were slaughtered at the Abattoir, with the following result:—

Cows slaughtered.	Totally Condemned.	Partially Condemned.	Number affected with Tuberculosis. Totally and partially condemned
2,282	64	94	69

In all cases in which animals from local cowsheds were slaughtered in the City, and which on post-mortem examination were found to be diseased, the stall, and in some cases the cowshed, from which the animal came was immediately cleansed and disinfected under the supervision of the food inspectors.

The following carcasses were seized or surrendered for various causes :—

Cattle	Calves.	Sheep.	Swine.	Goats.	Horses.	Total.
250	177	265	146	3	56	897

ANIMALS SENT TO KNACKERS' YARD AT CARRUTHERS STREET
FOR DESTRUCTION.

Horses destroyed.	Horses sent in dead.	Asses destroyed.	Cows destroyed.	Other animals destroyed.	Total.
99	830	19	121	27	1,096

In all cases where carcasses were condemned at the Abattoir and private slaughterhouses on account of their diseased condition, the history of each animal was obtained and a record kept. All cows which died in local cowsheds were reported to the food inspectors, and each case was carefully investigated and a record kept.

The following table shews the result of the examination of carcasses of diseased or injured animals totally or partially rejected:—

Condition.	Bulls.	Bullocks.	Cows.	Heifers	Calves	Sheep	Swine	Goats	Horses
Abscess, Partial	3	...	...	9	74	...	...
Anaemia	2	...	...	...
Arthritis, Septic	1	8	...	2	6	10	...	...
Asphyxia	1	...	19	93	40	...	...
Decomposition	2	...	24	23	26	...	...
„ Partial	10	19	...	...	11	18	...	...
Distomatosis	3	...	...	...
Dropsy	1	25	1	9	70	11	...	20
Emaciation.....	13	...	30	50	19	3	30
Epicarditis, Septic...	1	...	...	...	...	...	...
Helminthiasis.....	1	...	...	...
Icterus	1	...	33	...	11	...	...
Immaturity	40	...	...	...	...
Injury	1	...	...	1	5	1	...	...
„ Partial	17	74	...	13	38	137	...	...
Johnes Disease	1	...	...	...	...	...	...
Joint Ill	1	...	...	...	...
Malig. Neoplasms	2	...	...	...	...	...	...
Mammitis, Septic	2	...	...	...	...	...	...
Melanosis	1	...	...	...	...
Metritis, Septic	4	...	...	...	...	...	...
Necro-Bacillosis	1	...	...	...	...	...	...
Pericarditis, Septic	5	...	...	...	...	...	...
Peritonitis, Septic	2	...	...	4	2	...	...
„ Chronic, Partial	1	...	...	...
Pleurisy	2	...	...	3
Pneumonia	3	...	...	...	...	...	...
Pyæmia	3	...	...	2	...	...	...
Pyrexia	1	1	13	...	7	2	2	...	2
Sæpraemia	1	...	...	...	...	...	...
Septicæmia	3	...	...	1	...	...	...
Tuberculosis	2	147	4	10	1	24	...	1
„ Partial	2	4	409	1	...	...	505	...	...

The following table shews from which districts tubercular cattle, calves and swine came to Liverpool and were totally rejected as unfit for human food :—

Where from.							Cattle.	Pigs.	Calves.
Liverpool	...	...	...	...	...	...	46	4	—
Ireland	...	...	...	...	...	...	67	—	—
Preston	...	...	...	...	...	...	1	—	4
Saughall Massie...	...	...	...	...	...	...	1	—	—
Waterloo and Crosby	...	...	...	...	...	...	2	—	—
Isle of Man	...	...	...	...	...	...	5	—	—
Wellington	...	...	...	...	...	...	—	1	—
Beeston	...	...	...	...	...	...	—	1	—
Other Districts	...	...	...	...	...	...	31	18	6
TOTAL ...							153	24	10

ORGANS DESTROYED.

Disease.	CATTLE.								
	Bulls.	Bullocks.	Cows.	Heifers	TOTAL	Calves	Sheep	Swine	Horses
HEADS :—									
Tuberculosis	2	20	395	4	421	...	...	...	...
Abscess	2	15	195	...	212	2	...	...	...
Actinomycosis	17	...	17	...	...	...	...
Decomposition	1	2	...	3	...	60	4	...
Injury	4	...	4	...	...	4	...
Neoplasms	1	...	1	...	...	...	...
Ophtha. Contag. Contacts	27	...	27	...	...	11	...
LUNGS :—									
Tuberculosis	7	44	1,171	13	1,235	5	...	369	...
Abscess	3	84	...	87	...	8	1	...
Cysts	41	816	...	857	2	1	29	...
Pleurisy	2	20	...	22	1	1	13	...
Pneumonia	1	13	...	14	...	...	18	...
Congestion	13	373	...	386	3	8	423	...
Decomposition	8	61	...	69	...	100	442	...
Emphysema	35	...	35	...	...	...	...
Parasitic Cond.	31	8	...
Melanosis	2	...	2	...	...	...	...
LIVERS :—									
Tuberculosis	1	22	458	8	489	5	...	369	...
Abscess	15	126	...	141	2	1	15	...
Distomatosis	199	2,147	3	2,349	...	674	27	...
Cav. Angioma	1	426	...	427	...	...	15	...
Cirrhosis	147	755	...	902	1	...	369	...
Echinococci	7	226	...	233	2	1	57	...
Decomposition	18	88	...	106	9	111	491	25
Fatty Infiltration	...	2	41	...	43	...	...	...	...
Parasitic Cond.	2	44	5	...
Malignant Neoplasms	1	...	1	...	...	...	...
Bacil. Necrosis	2	...	2	...	...	...	...
Chronic Venous Congestion	1	...	1	...	...	...	...
HEARTS :—									
Tuberculosis	5	178	2	185	5	...	369	...
Pericarditis	1	17	...	18	...	...	84	...
Decomposition	16	...	...	16	...	68	387	24
Adhesions	2	...	2	...	...	...	...
Abscess	1	...	...
Cysts	5	...
Parasitic Cond.	30	5	...
SPLEENS :—									
Tuberculosis	1	6	310	4	321	...	...	369	...
Abscess	3	...	3	...	...	...	...
Actinomycosis	1	...	...	1	...	...	...	...
Decomposition	15	28	...	43	...	...	...	...
Hyperaemia	5	...	5	...	...	...	...
Peritonitis	1	...	1	...	...	...	...

ORGANS DESTROYED.

Disease.	CATTLE.					Calves	Sheep	Swine	Horses
	Bulls.	Bullocks.	Cows.	Heifers	TOTAL				
STOMACHS :—									
Tuberculosis	1	6	344	6	357	...	...	330	...
Abscess .....	...	...	4	...	4	...	...	...	...
Decomposition ...	...	2	2	...	4	...	...	...	...
Actinomycosis ...	...	1	...	...	1	...	...	...	...
Chronic Gastritis	...	...	14	...	14	...	...	...	...
Peritonitis .....	...	...	1	...	1	...	...	...	...
Polypi .....	...	...	1	...	1	...	...	...	...
Anaemia .....	...	...	1	...	1	...	...	...	...
Aptha. Contag.									
Contacts .....	...	...	27	...	27	...	...	...	...
INTESTINES :—									
Tuberculosis .....	...	6	349	4	359	...	...	330	...
Decomposition ...	...	...	1	...	1	...	...	...	...
Aptha. Contag.									
Contacts. ....	...	...	16	...	16	...	...	...	...
KIDNEYS :—									
Tuberculosis .....	...	9	411	6	426	...	...	...	...
Cysts .....	...	...	149	...	149	...	...	...	...
Cirrhosis .....	...	...	110	...	110	...	...	...	...
Nephritis .....	...	...	8	...	8	...	...	...	...
Decomposition ...	...	...	8	...	8	...	...	...	...
Abscess .....	...	...	4	...	4	...	...	...	...
Haemorrhage ...	...	...	4	...	4	...	...	...	...
Congestion .....	...	...	7	...	7	...	...	...	...
Hypertrophy .....	...	...	2	...	2	...	...	...	...
White Spot.....	...	...	...	...	...	10	...	...	...
UDDERS :—									
Tuberculosis .....	...	...	29	...	29	...	...	...	...
Mammitis .....	...	...	189	...	189	...	...	14	...
Cirrhosis .....	...	...	1	...	1	...	...	...	...
Abscess .....	...	...	14	...	14	...	...	...	...
Decomposition ...	...	...	2	...	2	...	...	...	...
Aptha, Contag.									
Contacts .....	...	...	27	...	27	...	...	...	...

This table does not include the organs from carcasses destroyed, or 35,687 lbs. of various organs which were utilised for industrial purposes.

PUBLIC HEALTH ACT, 1875, AND LIVERPOOL CORPORATION
ACT, 1921.

It was found necessary to take proceedings in one case under the above Acts. A grocer in Liverpool sold 748 tins of corned beef which on inspection were found to be unsound. Defendant was fined £187 and £5 5s. 0d. costs.

QUANTITIES OF FISH, RABBITS, POULTRY AND GAME WHICH PASSED
THROUGH THE WHOLESALE FISH MARKET.

FISH.				RABBITS.	POULTRY.	GAME.
Wet. Tons.	Dry. Tons	Shell. Tons.	Salmon. Tons.	No. of Packages.	No. of Packages.	No. of Packages.
17,260	4,253	963	73	11,630	4,287	416

It is estimated that 4,680 tons of wet fish, 3,640 tons of dry fish, 16,640 bags of shell-fish, 114,920 packages of rabbits, 169,000 packages of poultry, and 4,160 packages of lobsters, were sold from premises outside the Fish Markets.

FRUIT AND VEGETABLE MARKETS.

Large consignments from all over the world passed through the Fruit Markets and the wholesale depôts in Queens Square. Liverpool is the principal distributing centre in the country for imported fruit, and during the year 96,604 tons of vegetables passed through the Vegetable Market.

PREMISES VISITED BY THE FOOD INSPECTORS.

Slaughter houses.	Butchers' shops.	Fruit shops.	Fish & Fruit shops.	Food Hawkers' premises.	Jam factories.	Pickle factories	Food factories	Knackers yards.
7,491	56,439	47,047	43,712	2,644	73	46	1,284	113

COWSHEDS AND COWS INSPECTED BY THE FOOD INSPECTORS.

Cowsheds visited.	Cows examined.	Found healthy.	Found unhealthy.	Number reported for Veterinary examination.
1,008	13,022	12,919	103	103

123 samples of foodstuffs were obtained for bacteriological examination, including fish, shell-fish, meat, animal feeding stuffs, etc.

FOOD STUFFS CONDEMNED.

The following articles were condemned as unfit for human food, viz. : Beef, Mutton, Lamb, etc., 433,183 lbs. ; Wet and Dry Fish, 349,813 lbs. ; Mussels, Cockles, Winkles, 311 packages ; Crabs, Lobsters and Prawns, 2,951 lbs. ; Poultry, 1,459 head ; Game, 80 head ; Rabbits, 19,103 head ; Hares, 30 head ; Fruit, 626,071 lbs. ; Vegetables, 271,654 lbs. ; Tinned Foods, 34,011 tins ; Eggs, 20,624 ; Cheese, 302 lbs. ; Treacle, 1,904 lbs. ; Mincemeat, 96 lbs. ; Plum Puddings, 6.

CONTAGIOUS DISEASES OF ANIMALS ACTS.

The administration of the Contagious Diseases of Animals Acts and the Orders of the Ministry of Agriculture are carried out by the food inspectors and one inspector whose whole time is taken up with this work. The most serious outbreak was one of Foot and Mouth Disease which appeared in the City in the early part of the year. The disease occurred in three cowsheds, and 37 dairy cows had to be slaughtered. All movement of animals was at once prohibited, and the disease checked as far as Liverpool was concerned, but, owing to the large number of outbreaks in other parts of the country, the movement of all animals was controlled by licence for several months. During the period of restricted movement over 5,000 licences were issued from the Food Inspection Office, St. John's Market, involving the movement of some thousands of animals for immediate slaughter and the replenishing of the dairy herds in order to keep up the fresh meat and milk supply of the City. This entailed a large amount of additional work by the food inspection staff, and it is satisfactory to know that these duties

were promptly and efficiently carried out to the entire satisfaction of the Local Authority and the Ministry of Agriculture.

The interpretation and enforcement of the many complicated Orders of the Ministry was accomplished with an absence of friction and the minimum of inconvenience to the interests concerned.

The following inspections were made under the Contagious Diseases of Animals Acts during the year :—

No. of visits to Railway Stations	...	...	...	...	2,267
„ Cattle Pens Inspected	...	...	...	...	47,163
„ „ „ Found clean	...	...	...	...	42,139
„ „ „ Found dirty	...	...	...	...	5,024
„ „ „ Cleansed before use	...	...	...	...	5,024
„ Cattle Trucks Inspected	...	...	...	...	16,512
„ „ „ Found clean	...	...	...	...	13,091
„ „ „ Found dirty	...	...	...	...	3,421
„ „ „ Cleansed before use	...	...	...	...	3,421
„ Horse Boxes Inspected	...	...	...	...	1,551
„ „ „ Found clean	...	...	...	...	1,208
„ „ „ Found dirty	...	...	...	...	343
„ „ „ Cleansed before use	...	...	...	...	343
„ Lairs and Saleyards Inspected	...	...	...	...	3,503
„ „ „ Found clean	...	...	...	...	2,439
„ „ „ Found dirty	...	...	...	...	1,064
„ „ „ Cleansed before use	...	...	...	...	1,064
„ Manure Wharves and other places	...	...	...	...	1,597
„ Crates of Live Poultry examined	...	...	...	...	2,712
„ „ „ „ Found defective	...	...	...	...	914
„ Empty Poultry Crates	...	...	...	...	927
„ „ „ „ Found dirty	...	...	...	...	44
„ Visits to Stables, Parasitic Mange Order	...	...	...	...	216

SWINE FEVER ORDERS OF 1908-1922.

The Swine Fever Orders control the movements of swine and provide for the dealing with swine fever outbreaks.

Two outbreaks of swine fever were reported to and confirmed by the Ministry of Agriculture. In both instances the pigs were slaughtered by the owners and any further spread of the disease checked.

ANTHRAX ORDER OF 1910.

Under this Order a number of sudden deaths in the local dairy herds were investigated, and in three instances anthrax was reported to and confirmed by the Ministry of Agriculture. The destruction of the carcasses, the cleansing and disinfection of the cowsheds, and the burning of contaminated manure, was immediately carried out under the supervision of the food inspectors, and the disease confined to one animal in each case.

ANIMALS TRANSIT AND GENERAL ORDER, 1912.

Regulations are made under this Order for the carriage of cattle, sheep, swine and goats in properly constructed vehicles, and with due regard to the comfort of the animals by absence of overcrowding, the feeding and watering at stated intervals, and care in loading and unloading. It also provides for the cleansing and disinfection of vehicles and premises after use.

EXPORTATION AND TRANSIT OF HORSES, ASSES AND MULES ORDER, 1921.

This Order is very drastic in its requirements, with a view to preventing the continuance of the worn-out horse traffic to the Continent. Liverpool is not a scheduled port for the shipment of horses to the Continent, but a certain number were sent by rail from Liverpool to the ports scheduled in the Order; these were examined by the Veterinary Superintendent and passed as fit to travel by rail. Only 101 horses have been despatched from Liverpool, and none since September, 1922

FOREIGN ANIMALS ORDER, 1910-1912.

The regulations under this Order provide for the landing of foreign animals at special landing places for immediate slaughter, the prevention of landing of manure, fittings, etc., unless by sanction of the Local Authority. Liverpool is not a port at which foreign animals can be landed, and the landing of manure, fittings, etc., is prohibited, hence the numerous visits to manure wharves (see page 173).

IRISH ANIMALS ORDER OF 1922.

This Order controls the landing and movements of Irish animals. Liverpool is not a port at which Irish animals can be landed; they are landed at Birkenhead and transferred to Liverpool by a movement licence after 10 hours' detention at Birkenhead.

CONVEYANCE OF LIVE POULTRY ORDER OF 1919.

The improvement in the manner of conducting the traffic in live poultry in accordance with the regulations in this Order continues; the Irish trade has also improved by the provision of better crates and less overcrowding than formerly, and is gradually attaining the standard reached by the British live poultry traders.

MARKETS, LAIRS AND SALE YARDS.

A sale of cattle and sheep is held each Monday at Stanley Cattle Market. The class of animals sold has been good, and the market has been well kept and cleansed after each sale. 1,965 cattle, 41,622 sheep, and 259 pigs passed through the market during the year.

The several saleyards for the sale of milk cows and the lairs for detention of animals for shipment have been kept in good condition.

IMPORTATION OF CANADIAN CATTLE ORDER, 1923.

This Order, as from the 1st April, 1923, permits the landing of Canadian store cattle in this country for distribution.

Liverpool is not a port at which the Canadian cattle may be landed, they must be landed at Birkenhead, and after 10 hours' detention can be transferred to Liverpool or elsewhere by a movement licence. It is hoped in the near future to conduct sales of Canadian store cattle at Stanley Cattle Market, and to provide a special landing place on the Liverpool side of the Mersey.

ANIMALS LANDING FROM IRELAND, CHANNEL ISLANDS AND ISLE OF MAN, ORDER, 1923.

This Order takes the place of the Irish Animals Order, 1922, and comes into force on 1st April, 1923. It imposes practically the same conditions on animals from Ireland, Channel Islands, and the Isle of Man, as are imposed on Canadian cattle.

FOOD POISONING.

Several minor cases of food poisoning were reported during the year 1922; enquiries were made into the circumstances in all cases, but no definite food product could be incriminated. These cases included five persons who came from St. Helens and consumed meat pies, and two persons ill after eating chicken and sausage.

A more serious case of food poisoning occurred in July, when 16 persons were taken ill three to four hours after partaking of corned beef which had been sliced and sold by a grocer. Five persons were removed from one house to the Mill Road Infirmary. Bacteriological examination revealed no food-poisoning bacilli, but gram positive and negative bacilli were found. No deaths occurred.

In September an outbreak of food poisoning occurred at Wallasey amongst the guests at a wedding party, and as the food materials were prepared in Liverpool, a considerable amount of enquiry and examination had to be made. The Medical Officer of Health of Wallasey gave much assistance in the investigation. There were 88 guests, of whom 65 were taken ill, seven being only slightly indisposed. None of the patients died. The food was supplied by a Liverpool caterer, and the evidence pointed strongly to a "trifle" as being the cause of the illness. The bacillus of Gaërtner was isolated directly from the "trifle," and also from all the cases examined, and the blood of the patients reacted to the same organism.

Full investigations were made as to the possibility of a Gaërtner "carrier" amongst those who prepared the "trifle," and material from those engaged at the catering establishment was examined with negative results. The possibility of mice being chronic carriers of the bacillus was enquired into. No food poisoning organisms were found in any other of the food.

The following are extracts from Professor Beattie's bacteriological report on the outbreak:—

FIRST REPORT (18-9-22).

The following specimens were received for examination on the 5th September, 1922:—

- I. Four unopened tins of lobster—(1, 2, 3, 4).

- II. One unopened tin of tongue.
- III. One unopened tin of salmon.
- IV. One unopened tin of sardines.
- V. A quantity of ice-cream.
- VI. A quantity of jelly.
- VII. An untouched trifle.
- VIII. Portions of the wedding cake.
- IX. Special cakes.

I, II, III and IV were from the same consignment as those used for making the sandwiches which were consumed at the wedding feast. None of the original sandwiches could be obtained, nor any of the material from the used tins. The empty tins had been destroyed before the symptoms of illness developed.

V and VI were remains of the ice-cream and jelly used at the feast.

VII—four trifles made at the same time were taken to the feast. Three of these were consumed, the fourth was not touched, and this was the one sent to the Laboratory.

BACTERIOLOGICAL EXAMINATION.

VI. JELLY.—Sterile.

IV. SARDINES.—Sterile.

III. SALMON.—Sterile.

II. TONGUE.—Sterile.

I. LOBSTER.

(1) Parts were decomposed, and cultures of a staphylococcus, a gram positive bacillus, and an anaerobic bacilli were found.

(2, 3, and 4)—No decomposition changes apparent, but gram positive and gram negative bacilli, and anaerobes, were obtained.

The bacilli were examined but did not correspond with any of the organisms of the food-poisoning group, or of the disease-producing anaerobes. Inoculations were made into guinea pigs without any apparent result.

V. ICE-CREAM.

This contained staphylococci, bacillus coli, and another gram negative bacillus

The gram negative bacillus was not of the food-poisoning group, and produced no effects on animals either injected in pure culture or in association with the other organisms found in the ice-cream.

VIII and IX.

No evidence of any food-poisoning organisms.

VII. TRIFLE.

This contained staphylococci, bacillus coli, and a gram negative bacillus producing white colonies on red agar plates.

The gram negative organisms proved, on further examination, to give all the morphological, cultural, and chemical reactions of the bacilli of the food-poisoning group.

Agglutination.—Agglutination reactions were done against standard sera of *B. paratyphosus* A. and B., *B. enteritidis* (Gaërtner), and *B. Aertrycke*. There was very definite agglutination against *B. enteritidis* (Gaërtner) in dilutions up to 1 in 40, with very slight agglutination to *B. paratyphosus* B. in 1 in 20.

After sub-culture for a few days the agglutination to *B. enteritidis* (Gaërtner) serum became very definite, and with the *B. paratyphosus* B. it remained very slight.

Pathogenicity.—An emulsion of the trifle was injected subcutaneously into guinea pigs, and also pure cultures of the gram negative bacillus isolated from it, and both caused the death of the guinea pigs in from 48 to 96 hours, with very marked oedema of the subcutaneous tissues, and in some cases definite signs of swelling of the glandular tissue in the intestine, and enteritis.

The organism was recovered in pure culture from the heart blood, and was also isolated from the intestine.

EXAMINATION OF BLOOD AND FAECES FROM PATIENTS.

The blood was obtained from ten patients, and the faeces from seven patients, who had had fairly severe attacks.

From the faeces a gram negative bacillus, corresponding in all its characters, including pathogenicity for guinea pigs, with the organism isolated from the trifle, was isolated in all cases. As regards the

blood, during the first week the agglutination with emulsion of standard *B. enteritidis* (Gaërtner) was partial, but there was no agglutination with *B. para typhosus* B., or *B. Aertrycke*. During the second week the agglutination to *B. enteritidis* (Gaërtner) was more marked, and very definite in dilutions up to 1 in 120.

Comparative Agglutination.—Agglutination against the blood of nine of the patients was done by the microscopic method against the following organisms:—*B. paratyphosus* B., *B. enteritidis* (Gaërtner), 2 strains, the organism isolated from the trifle, and that from the faeces of the patients.

There was a well marked agglutination reaction up to 1 in 120 (the examination was not carried beyond this dilution), in every case with *B. enteritidis* (Gaërtner), the organism from the trifle, and the organism from the faeces, whereas the controls showed no agglutination, and *B. paratyphosus* B. showed absence of agglutination in five cases, agglutination to 1 in 80 in one case, and 1 in 120 in three cases. The latter results were obtained after 24 hours incubation, whereas all the Gaërtner agglutinations were apparent in 2 hours up to the full titre examined.

My conclusion, on this evidence, is that the illness was caused by *B. enteritidis* (Gaërtner), and that the organism was contained in the trifle.

Investigations have been carried out to determine, if possible, how the trifle became infected, but these are not yet complete.

FINAL REPORT (7-10-22).

Further experiments were undertaken, after those reported on 18/9/22, to determine how the trifle was infected, and the following examinations were made:—

1. *The Ingredients of the Trifle.*—The custard powder was the only ingredient available which was actually used in the making of the trifle. This showed no evidence of *B. enteritidis* (Gaërtner), or any other food-poisoning organism.

2. *The Makers of the Trifle.*—The blood and faeces of the chef who made the trifle, and the blood and faeces of the girl who made the

custard, were examined, but in neither case was there any trace of agglutination with the causal organism, and no food-poisoning organisms were found in the faeces. The blood of the only other worker who had anything to do with the trifle was also examined, but no evidence of infection was traced.

3. *Staff dealing with Cream and Milk.*—Although there seemed very little probability that the infection came by way of the cream and milk, as only a very small proportion of the day's supply was used for the trifle, I examined five members of the caterer's staff who were employed in dealing with the cream and milk, but none of these gave any evidence of infection with *B. enteritidis* (Gaërtner).

4. It was reported that *the wife of the Caretaker of the Hall* at which the wedding breakfast was held had been ill before the breakfast. She did not handle the food, and it seemed highly improbable, from the point of time, etc., that her illness could in any way be associated with the outbreak, but in order to make the investigation as complete as possible her blood and faeces were examined. Her blood gave evidence of agglutination to *B. enteritidis* (Gaërtner) up to dilutions of 1 in 120 (the same titre as shown by those infected at the breakfast). She had, however, partaken of the trifle, and had had a mild attack similar to the others who had partaken of the trifle, and, therefore, there seemed no reason to suspect her as a carrier.

5. *From general inquiries* I am satisfied that the infecting agent was in the custard. This was specially made for these trifles; it had to stand a certain time, and this was sufficient to allow a considerable development of the bacilli, and it was necessarily distributed completely through the trifle. The cream had been added on the morning of the breakfast. Fully four-fifths of the same cream was used for other purposes, and no other cases of food-poisoning were reported. The other ingredients of the trifle, viz., sponge cakes, ratafia biscuits, jam, sugar, milk, and sherry, were all from ordinary stock, and were used by the caterers for other purposes without, apparently, any deleterious results.

Carriers among the workers were excluded, and from all investigations I have been unable to determine the means by which the trifle (or the custard) was infected. The chef, and the girl employed in

making the trifle, have as part of their usual work to deal with meats, etc., and I would suggest as a possible cause the infection of the trifle by the hands of the workers who may have been previously handling infected meat, or carriage from this meat by flies. That there was no evidence of an outbreak from any meat may be explained by the fact that the meat was cooked after being handled, and any infective agent destroyed. Further, it is an established fact that meat infected by *B. enteritidis* (Gaërtner) presents the appearance of perfectly sound and fresh meat. The custard and trifles were carefully covered, and there is no direct evidence that infection was conveyed by rats or mice. The latter were examined for *B. enteritidis* (Gaërtner) without result.

SUMMARY.

A table has been obtained shewing the different foods consumed at the wedding feast by 52 of the guests, 36 of whom had symptoms of food-poisoning.

Certain of the foods could be excluded on the ground that they were consumed by a very few guests, and that the majority of those who showed symptoms of illness did not partake of them. The foods thus excluded were :—

Lobster (15);
 Salmon (5);
 Sardines (7);
 Ham (18);
 Tongue (20);
 Plain Jelly (11);
 Fruit Jelly (1).

It is, however, interesting to note that of the 15 who partook of lobster 13 were ill, but all of these also partook of trifle.

The two foods partaken of by the majority of the guests were trifle and ices :—

				Taken by.	Ill.	Not taken by.	Ill (slight) indisposition.
Trifle	...	...	...	45	35	7	1
Ices	...	...	...	43	29*	9	6†

* Of these 28 had taken trifle.

† All had taken trifle.

The blood of the chef and two kitchen girls, the only members of the caterer's staff who were concerned in the preparation of the trifle, have been examined, and none showed any trace of agglutination with standard *B. enteritidis* (Gaërtner) culture, or with the organism isolated from the trifle.

SUSPECTED ERGOTISM.

In November a case of suspected ergotism was discovered. The patient was admitted to hospital for surgical treatment and shewed evidence of symmetrical gangrene of the toes. On enquiry it was found that the patient, a Russian Jew, ate exclusively rye bread; his family, on the other hand, used also white bread. Samples of the rye or black bread used were examined by the City Analyst, and a detailed investigation was carried out by Professor Dilling of the University of Liverpool.

Ergot fungus was found microscopically in the black bread, and in the rye grain at the mill it could be detected by the naked eye. Various experiments which were made by Professor Dilling proved conclusively that the rye flour was contaminated by the ergot fungus. It is the practice to dilute the rye meal with wheat flour. Enquiries were made into the poisoning by Dr. Hanna, one of the Assistant Medical Officers, who found that the rye was of local origin, and was obtained by the miller from South Lancashire districts. He ascertained that the presence of the ergot fungus in the grain was well known amongst the farmers, but that the area infected was probably a very restricted one.

The rye grain is sold in the main for distilling purposes, but that made into meal was partly used for making bread largely consumed by Jews.

The farm where the rye was grown was visited during threshing operations, and ergot grains were very much in evidence. No attempt is made by the millers to separate the ergot grains before milling, as they have no machinery for the purpose.

Further enquiries will be made into the matter during the coming summer and autumn.

Arrangements were made with the local Jewish bakers for a larger proportion of wheat flour to be introduced into the flour mixture.

Millers who grind rye for human food should use only rye unaffected with ergot.

DAIRIES, COWSHEDS AND MILKSHOPS

There is no change in the method of procedure respecting the licensing of cowsheds and the registration of dairies, milkshops and milkstores.

STATISTICS RESPECTING COWSHEDS.

						<u>1922</u>
Number of applications to keep cows on premises not						
	previously licensed	...	...			3
„	„ granted	...	...	...	...	3
„	„ for re-issue of licence	...	...			1
„	cows applied for	...	...	...	...	35
„	„ granted	...	...	...	...	35
„	applications for transfer to fresh tenants of cow-					
	sheds previously licensed	...				26
„	„ granted	...	...	...	...	26
„	„ for additional stock	...	...	...		2
„	Cowsheds on the register 31st December, 1921	...				296
„	„ „ „ „ 1922	...				294
„	cows licensed to be kept within the city area	...				4,880

COWSHED INSPECTION.

						<u>1921.</u>	<u>1922.</u>
Number of inspections of Cowsheds	...	...	...			2,993	2,137
„ found incorrect	...	...	...	...	...	62	49

Twenty-five notices were issued to occupiers directing their attention to minor contraventions of regulations.

The number of cowsheds in the City during the years 1914 to 1922, inclusive, together with the number of cows licensed to be kept, and the number of applications for new cowsheds are shown in the following table:—

Years		Cowsheds		Cows		Applications.
1914	...	429	...	6,734	...	21
1915	...	423	...	6,460	...	7
1916	...	383	...	6,043	...	8
1917	...	393	...	6,516	...	3
1918	...	339	...	5,487	...	1
1919	...	323	...	5,228	...	2
1920	...	295	...	4,942	...	7
1921	...	296	...	4,921	...	1
1922	...	294	...	4,880	...	3

MILKSHOPS.

						<u>1921.</u>	<u>1922.</u>
Number of applications for registration	...	...	...	...	...	76*	114*
„ „ granted	...	...	...	...	...	75	110
„ „ withdrawn	...	...	...	...	...	—	—
„ „ in abeyance	...	...	...	...	...	1	4
„ „ refused	...	...	...	...	...	—	—
Number of Milkshops on the register at the end of 1918	...	...	...	...	...	...	720
„ „ „ „ 1919	...	...	...	...	...	...	670
„ „ „ „ 1920	...	...	...	...	...	...	655
„ „ „ „ 1921	...	...	...	...	...	...	688
„ „ „ „ 1922	...	...	...	...	...	...	691

DAIRIES AND MILKSHOPS.

						<u>1921.</u>	<u>1922.</u>
Number of Inspections of Dairies and Milkshops	...	...	...	...	...	6,448	5,088
„ found incorrect	...	...	...	...	...	16	32

Thirty-nine caution notices were issued to occupiers of milkshops, and two notices were sent to farmers for minor contraventions of the Regulations.

* Sixty-six of these applications were transfers.

ICE CREAM MAKERS AND VENDORS.

The usual inspections have been made of the premises utilised by street traders solely for manufacturing ice-cream.

The dwellings which these street traders occupy have also been kept under observation, and in no instance during the past year has it been found that ice-cream has been made or stored in or about these dwellings.

A systematic inspection has also been made of shopkeepers' premises which are used for the manufacture or sale of ice-cream.

			<u>1921.</u>		<u>1922.</u>
Number of premises under inspection	...	...	1,010	...	994
„ visits made	...	...	2,839	...	2,473
„ caution notices issued	...	...	19	...	17

PIGGERIES.

During the year special attention has been given to the keeping of pigs on suitable premises in continuation of the policy adopted with a view to the encouragement of food production as recommended by the Order in Council dated 10th January, 1917.

At the beginning of 1917 there were 136 piggeries licensed to keep 1,760 pigs. There are now 153 piggeries licensed to keep 2,735, an increase of 975 pigs during the past five years.

In 1922, 15 applications involving the keeping of 210 pigs were made and granted. 507 inspections were made during the year.

TUBERCULOSIS AND THE MILK SUPPLY.

LIVERPOOL CORPORATION ACT, 1900.

The examination of cows and cowsheds within the City has been duly carried on throughout the year, and all cases of sickness found by the Inspectors reported to the Veterinary Department. In cases where the cows are reported to be suffering from any disease of the udder, the Medical Officer of Health directs that the animal be submitted to veterinary examination, and if it is found to be affected with disease likely to be inimical to the public health, the milk supply from the affected cow is stopped.

Apart from notifications, the Veterinary Department have submitted a great number of cows in the town to inspection.

The following is a table showing the number of visits made by the Veterinary Inspectors to cowsheds within the City Boundary:—

YEAR.	No. of Visits to Town Cowsheds.	No. of Cases notified by Owners.	Other Visits.	No. of Cows examined.	No. of Cows with Tuberculosis of the Udder.	No. of Convictions for Offences under the Act.
1918	105	2	103	1570	2	—
1919	72	14	58	867	2	—
1920	67	11	56	934	6	—
1921	91	7	84	1400	21	—
1922	100	3	92	1535	6	—
Totals...	435	42	393	6306	37	—

It has been necessary during the routine examination for the Veterinary Inspectors to take 51 samples of milk for bacteriological examination 33 of these were control samples and 18 direct. Of the control samples 5 were proved tubercular and 28 non-tubercular. Of the direct samples 6 were proved tubercular and 12 non-tubercular.

All the above figures are included in the table of samples submitted for bacteriological examination within the City.

MILK SUPPLIED FROM OUTSIDE THE CITY BOUNDARIES.

Under the Liverpool Corporation Act, 1900, Inspectors systematically visit various places supplied with milk from the country, including the railway stations and hospitals, and there take samples. These samples are then submitted to bacteriological examination. Should they be found to contain tubercle bacilli the Veterinary Superintendent or his assistant, accompanied by the Medical Officer of Health or his representative, and furnished with an order signed by a magistrate resident within the county from which the milk is consigned (as prescribed by the Act), visit the farm or dairy and examine the stock therein.

The following table shows the number of visits to farms outside the City boundary during the past five years:—

YEAR.	No. of Farms Visited.	No. of Re-Visits to Farms.	Total No. of Visits to Farms.	No. of Cowsheds Examined.	No. of Cows Examined.	No. of Cows with Tuberculosis of Udder.	No. of Convictions for Offences under the Act.	No. of Orders Prohibiting the Sale of Contaminated Milk within the City.
1918	6	5	11	14	449	9	—	—
1919	6	—	6	14	312	1	—	—
1920	23	4	27	48	1225	4	—	—
1921	40	18	58	113	2225	10	—	—
1922	49	21	70	114	2324	16*	—	—
Totals...	124	48	172	303	6535	40	—	—

* The examination of one herd in which a tuberculous udder was ultimately detected was commenced at the end of 1922 and not finally completed until early in 1923. This explains the difference in the number of tuberculous direct samples and the number of cows with tuberculosis of the udder.

During the examination of cattle outside the City, it has been necessary for the Veterinary Department to take 131 samples of milk for bacteriological examination. Of these, 86 were control samples and 45 were direct samples. Of the control samples, 7 were proved tubercular and the remainder non-tubercular. Of the direct samples 15 proved tubercular and the remainder non-tubercular.

BACTERIOLOGICAL EXAMINATION OF MILK.

From January, 1901, to December, 1922, 8,679 samples of milk from sources outside the City were submitted for bacteriological examination, and 549 of the samples were found to be contaminated by tubercle bacilli, this being equal to 6·3 per cent.

All the farms from which the contaminated milk was supplied (366 in number) were visited and the herds examined, the total number of cows being 20,455; 187 cows were regarded as "suspicious," and the farmers were requested to isolate these animals pending a report of the City Bacteriologist on samples of milk taken direct; 373 samples were taken in this way, and 80 were reported by the City Bacteriologist to contain tubercle bacilli. In several instances the emaciated condition of the animal was such as to justify immediate slaughter. "Control" samples were also taken, and the examination of these samples generally proved that the remainder of the herds were healthy.

In the earlier years of the operation of the Liverpool Corporation Act, 1900, now included in the Liverpool Corporation Act, 1921, the action of the Health Committee in regard to the examination of cattle and farms outside the City area was in many cases resented by the farmers concerned, and it became necessary for the Committee to make Orders prohibiting the sending of milk from certain farms into Liverpool. Twenty-three such Orders were made. Twenty-seven convictions were also obtained against farmers, whose premises were outside the City, for failing to notify the Medical Officer of Health of the existence of "suspicious" animals amongst the herds.

As a general rule, when first visiting these country cowsheds, it was found that very little inspection was done by the Rural Authorities, and the cowsheds were devoid of light, ventilation and drainage, the floors were badly paved and covered with filth, the walls and ceilings were extremely dirty and rarely, if ever, limewashed. In some instances the cubic capacity per cow was as low as 200 feet.

During latter years a much better condition has been found, and it is evident that the Rural Authorities are becoming more alive to the

necessity for close attention to the sanitation of cowsheds. There can be little doubt that the action of such large milk-consuming centres as Manchester, Sheffield, Liverpool, etc., has been instrumental in bringing about more activity in regard to these matters in country districts.

During the same period 4,835 samples of milk from town cowkeepers were submitted for bacteriological examination, and 184 of the samples were found to be contaminated by tubercle bacilli, this being equal to 3·8 per cent.

Owing to the neglect to notify the Medical Officer of Health that they had in their dairy a cow "suspicious" of tuberculosis of the udder, it was found necessary up to the year 1905 to prosecute 21 cowkeepers. Since that time the requirements of the Act have been more closely observed.

The accompanying tables give detailed particulars relating to the samples taken and result of examination, together with the number of cows examined:—

TABLE RELATING TO COUNTRY SAMPLES.

Year.	Samples from Bulk.			FARMS.			Samples direct from individual cows at farm		
	No. taken.	Tubercular.	Percentage Tubercular.	Farms affected.	Cows examined.	Cows suspected.	No. taken.	Tubercular.	Percentage Tubercular.
1913	412	28	6·80	13	784	4	14	2	14·29
1914	452	42	9·30	17	1,302	6	47	6	12·77
1915	419	30	7·16	4	1,265	3	16	3	18·75
1916	439	22	5·0	10	1,395	5	30	1	3·33
1917	387	20	5·17	11	898	10	18	3	16·70
1918	387	14	3·62	6	449	9	10	2	20·00
1919	346	26	7·51	6	312	1	3	1	53·33
1920	800	56	7·0	18	1,225	8	14	4	28·57
1921	507	54	10·65	23	2,225	10	37	10	27·02
1922	590	53	8·98	34	2,324	16	45	15	33·33
TOTAL ...	4,739	345	7·28	142	12,179	72	234	47	20·09

TABLE RELATING TO TOWN SAMPLES.

Year.	Samples from Bulk.			Cowsheds.	
	Number taken.	Tubercular.	Percentage Tubercular.	Cows examined.	Cows suspected.
1913	238	18	7.57	4,732	18
1914	206	11	5.34	4,043	21
1915	261	14	5.36	1,781	15
1916	147	5	3.40	3,232	11
1917	128	9	7.03	896	2
1918	113	12	10.62	1,570	2
1919	163	4	2.45	867	2
1920	222	17	7.66	934	6
1921	302	46	15.23	1,400	21
1922	244	11	4.50	1,535	6
TOTAL ...	2,024	147	7.26	20,990	104

SALE OF FOOD AND DRUGS ACT.

The Sale of Food and Drugs Act, and its various amendments, are designed to safeguard the public from purchasing articles injurious to health or not of the nature, substance and quality demanded.

Great care is necessary in procuring samples, and in submitting them for analysis, or very misleading results will ensue. All samples of food or drugs are taken either by or under the superintendence of trained and qualified Inspectors of the Health Department. It is of the greatest consequence that trained and practised persons should be employed for this purpose, and it is necessary from time to time to employ women or young people as agents, to go into the shop to ask for the articles, and as soon as the agent receives them, the Inspector enters the shop and completes the formalities which the Act requires.

Only a few purchases are made of those articles which, experience shows, are not likely to be adulterated. On the other hand, when enterprising firms, seeking new fields for adulteration and profit, place suspicious articles on the market, it becomes necessary, sometimes, to take a considerable number of the articles before the fraud can be detected and checked.

The practice of taking samples "informally" (*i.e.*, without any intimation to the vendor that samples are to be analysed) has been continued throughout the year. This practice is very valuable, as it saves time and trouble whilst causing no annoyance to honest shopkeepers, whose objections to the taking of samples, with all the formalities required by the Act, are that the counter space is occupied for the division of the samples into three parts, and, in addition, the action excites curiosity and possibly suspicion on the part of regular customers.

The tables on the following pages give a summary of the samples analysed during the year.

MILK PROSECUTIONS.

A Circular (No. 325) was issued in July to Local Authorities by the Ministry of Health drawing attention to prosecutions in certain parts of the country for selling milk deficient in fat. It pointed out that it was extremely undesirable that a prosecution should be based on the

result of an isolated test, when other tests have proved satisfactory, and that prosecutions should be instituted only where a series of tests have shewn repeated default. The Medical Officer of Health in an official communication pointed out that it has been uniformly the practice in Liverpool to consider all circumstances before prosecutions are taken and that the experience of Liverpool is that circumstances of the kind in question were of the utmost rarity, and, that being so, the Circular would rather embarrass Authorities by giving encouragement to recalcitrant dealers. The views of the Medical Officer were eventually justified, as subsequently a further circular was issued by the Ministry pointing out that the previous Circular appeared to have been widely misunderstood and to some extent misrepresented, and as it had not produced the effect which was intended the Minister of Health had decided to withdraw the Circular feeling that he could rely upon local Authorities to administer the Sale of Food and Drugs Act with due fairness and consideration to the various interests concerned.

DETAILS OF SAMPLES OF MILK OBTAINED FOR CHEMICAL ANALYSIS.

	1921.	1922.
Number of samples purchased on week-days in town	1,252	1,256
„ informations	67	21
„ samples taken at railway stations on week-days	921	1,330
„ informations	8	16
„ samples purchased on Sundays in town ...	137	114
„ informations	3	4
„ samples taken at railway stations on Sundays	107	133
„ informations	1	2
„ sample taken at City Hospitals	351	428
„ informations	—	—
„ samples taken at Corporation Infant Welfare Centres and Day Nurseries..	219	239
„ informations	—	—
„ samples taken at other Institutions ...	—	174
„ informations	—	—

MARGARINE ACT.

	1921.	1922.
Number of visits to wholesale dealers in margarine	131	1,000
„ visits to shops	3,481	4,033
„ visits to other places	2,592	1,914

SPECIAL EXAMINATIONS.

The total number of samples submitted during 1921 and 1922 for special examination was 65 and 70, respectively.

POISONS AND PHARMACY ACT, 1908.

The Poisons and Pharmacy Act, 1908, came into operation on the 1st April, 1909.

The object of the Act is to regulate the sale of certain poisonous substances, and to amend the Pharmacy Acts. It is fully referred to in the Annual Report for 1909.

The number of licences issued under this Act during the year 1922 was 21.

PUBLIC HEALTH (MILK AND CREAM) REGULATIONS,
1912 and 1917.

Report for the year ending 31st December, 1922:—

1. MILK AND CREAM NOT SOLD AS PRESERVED CREAM.

Number of samples examined for the presence of a preservative:

Milk 3,673, Cream 12.

Number in which a preservative was reported to be present:

(a) Milk	...	...	...	...	...	...	0
(b) Cream	...	...	...	...	...	...	0

2. CREAM SOLD AS PRESERVED CREAM.

(a) Instances in which samples have been submitted for analysis to ascertain if the statements on the label as to preservatives were correct:

Number of samples taken	...	...	...	11
Correct statements made...	...	...	...	11

(b) Determinations made of milk fat in cream sold as Preserved Cream:

Above 35 per cent.	11
--------------------	-----	-----	-----	-----	----

(c) Instances where (apart from analysis) the requirements as to labelling or declaration of Preserved Cream in Article V (1), and the proviso in Article V (2) of the Regulations were not observed:

1 and 2—The requirements of the Regulations were observed at the places visited.

3. THICKENING SOLUTIONS.

None found.

INFORMAL SAMPLES.				FORMAL SAMPLES.				
Number taken.	Number genuine.	Adulterated.		Number taken.	Number genuine.	Adulterated.		Number cautions.
		Sch'dule A.	Sch'dule B.			Sch'dule A.	Sch'dule B.	
—	—	—	—	55	50	5	—	5
1	1	—	—	31	31	—	—	—
1	1	—	—	15	15	—	—	—
2	2	—	—	10	10	—	—	—
11	6	5	—	54	54	—	—	—
5	5	—	—	97	97	—	—	—
—	—	—	—	44	24	12	8	—
10	9	1	—	—	—	—	—	—
6	6	—	—	60	57	—	3	—
12	10	1	1	93	93	—	—	—
96	96	—	—	40	40	—	—	—
62	39	16	7	3612	3313	189	110	44
—	—	—	—	36	36	—	—	—

SUMMARY OF SAMPLES, &c.—continued.

INFORMAL SAMPLES.				FORMAL SAMPLES.						
Number taken.	Number genuine.	Adulterated.		Nature of Sample.	Number taken.	Number genuine.	Adulterated.		Number caut'nd.	Infor- mations.
		Sch'dule A.	Sch'dule B.				Sch'dule A.	Sch'dule B.		
—	—	—	—	Milk Butter.....	10	9	1	—	1	—
—	—	—	—	Rice.....	136	111	4	21	4	—
16	16	—	—	Syrup and Treacle	10	10	—	—	—	—
22	22	—	—	Wines and Spirits	11	11	—	—	—	—
60	58	2	—	Drugs	16	15	1	—	1	—
251	246	2	3	Miscellaneous	603	586	11	6	13	—
821	770	40	11		5853	5458	238	157	125	44

SUMMARY OF SAMPLES IN WHICH LEGAL PROCEEDINGS WERE INSTITUTED DURING THE YEAR ENDING
DECEMBER 31st, 1922, TOGETHER WITH RESULT.

No. of Infor- mations.	Nature of Sample.	Nature of Offence.	RESULT OF LEGAL PROCEEDINGS.				
			No. of convic- tions.	No. with- drawn on payment of costs.	No. with- drawn and dismissed without costs.	Fines £ s. d.	Costs. £ s. d.
18	Milk	Adulterated with water	15	2	1	60 0 0	37 17 6
23	"	Deficient in cream	13	5	5	174 0 0	23 11 0
2	"	Coloured with Annatto	2	—	—	4 0 0	3 3 0
43			30	7	6	£238 0 0	£64 11 6

FERTILISERS AND FEEDING STUFFS ACT, 1906.

On 1st January, 1907, a Fertilisers and Feeding Stuffs Act, which replaced the old Act of 1893, came into operation.

Under it the City Analyst was appointed official agricultural analyst, and the three inspectors under the Sale of Food and Drugs Act were appointed official samplers.

A certain remuneration was agreed to in respect of the work done under the Act.

Total number of samples submitted during the following years:—

1920	...	...	...	...	...	...	18
1921	...	...	...	...	...	...	25
1922	...	...	...	...	...	...	18

REPORT OF THE CITY BACTERIOLOGIST, 1922.

During the year 1922, 28,444 specimens were examined for the Health, Port Sanitary, Water, and Baths Committees.

The specimens may be grouped as follows:—

1. Milk and other Food-stuffs.
2. Water.
3. Rats, Mice, etc., for possible infection with the bacillus of Plague.
4. Material from Infectious Diseases in Man (Diphtheria, Typhoid Fever, Tuberculosis, etc.).
5. Venereal Diseases.
6. Material from Infectious Diseases in Animals (Tuberculosis, Anthrax, etc.).
7. Other Specimens.

MILKS AND OTHER FOOD-STUFFS.

The following samples have been examined for the Public Health Department:—

(a) Fresh Milks—

City Hospitals	...	...	...	...	157
Infant Welfare Centres	...	...	...	...	76
Milk Shops, Railway Stations, etc.	...	...	...	...	753
					<hr/> 986

(b) Condensed Milks 8

(c) Other Food-stuffs—Canned and Potted
Meats, etc. 64

1,058

(a) *Fresh Milks*—

City Hospitals.—Of the 157 samples examined, 67 contained *B. coli* in one-hundredth of a c.c., in 3 samples *B. coli* was absent in 1 c.c., 4 contained *B. enteritidis sporogenes* in 10 c.c., 2 contained streptococci, and *B. tuberculosis* was found in 12 samples.

Infant Welfare Centres.—Of the 76 samples examined, 25 contained *B. coli* in one-hundredth of a c.c., in 9 samples *B. coli* was absent in 1 c.c., 2 contained *B. enteritidis sporogenes* in 10 c.c., 2 contained streptococci, and *B. tuberculosis* was found in 10 samples.

Milk Shops, Railway Stations, etc.—Of the 753 samples examined, 251 contained *B. coli* in one-hundredth of a c.c., in 104 *B. coli* was absent in 1 c.c., 13 contained *B. enteritidis sporogenes* in 10 c.c., 30 contained streptococci, and *B. tuberculosis* was found in 83 samples.

Thus, in 986 samples of milk, 105 were found to be infected with tubercle. This, at first sight, seems a large proportion, but many of the samples were in duplicate, and it is impossible to draw any conclusion from these figures.

(b) Condensed Milk.—Of the 8 samples examined only 3 were sterile, 1 contained putrefactive organisms, 2 staphylococci, and 2 contained streptococci.

(c) Other Food-stuffs.—Of the 64 samples examined, 13 were sterile, 6 shewed putrefactive organisms, 22 contained *B. coli*, 3 contained *B. enteritidis*, and 8 staphylococci. The shell-fish were all free from *B. typhosus*, and their bacterial content (*i.e.*, of other bacteria), was not excessive.

Water—

There were 411 samples of water examined, viz. :—

For the Water Engineer :—

Daily Samples	...	...	...	...	298
Special Daily Samples	...	...	...	...	40
Monthly Samples :—					
Prescot—Vyrnwy	...	...	...	...	11
,, —Rivington	...	...	...	...	11
George Holt Well	...	...	...	...	3
John Holmes Well	...	...	...	...	2
Dudlow Lane Well	...	...	...	...	11
Other Special Samples from Rivington District	...	...	...	...	32
				—	408
For the Medical Officer of Health	...	...	...	...	3
				—	411
				—	

The water throughout the year, whether from the wells or from Prescott, was, from the bacterial standpoint, satisfactory. With regard to the three samples from the Medical Officer of Health, two of them were drinking water, and, bacteriologically, were quite satisfactory, the other sample was taken from a cellar where the water was percolating through the ceiling, in this case there was no evidence of *B. typhosus* or any other organism likely to cause disease, although there were innumerable bacteria.

Rats, Mice, etc., for possible infection with the Bacillus of Plague—

The total number examined is as follows:—

			Rats.	Mice.	Cat.	Kittens.	Total.
Port	...	...	7,847	187	—	3	8,037
City	...	...	3,172	30	1	—	3,203
			<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Totals	...	...	11,019	217	1	3	11,240
			<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

Three infected rats were found in a City Warehouse. These were associated with an infected vessel in the docks. Prompt measures were taken and the usual procedure adopted, no further spread taking place.

Material from Infectious Diseases in Man—

(a) *Swabs from suspected cases of Diphtheria:—*

			Positive.	Negative.	Total.
City Hospitals	...	...	325	5,925	6,250
Infant Welfare Centres	...		—	10	10
Port Sanitary Authority	...		6	48	54
Private Practitioners	...		81	481	562
			<hr/>	<hr/>	<hr/>
Totals	...	...	412	6,464	6,876
			<hr/>	<hr/>	<hr/>

(b) *Urine from suspected cases of Diphtheria:* There were 110 specimens examined for the City Hospital, Fazakerley, and all were negative.

(c) *Blood from suspected cases of Typhoid Fever:—*

			Positive.	Negative.	Total.
City Hospitals	...	...	14	49	63
Private Practitioners	...		3	21	24
			<hr/>	<hr/>	<hr/>
Totals	...	...	17	70	87
			<hr/>	<hr/>	<hr/>

(d) Urine and Faeces from suspected cases of Typhoid Fever :—

			Positive.	Negative.	Total.
City Hospitals	—	152	152
Private Practitioners	—	8	8
			—	—	—
Totals	—	160	160
			==	==	==

(e) Sputum from suspected cases of Tuberculosis :—

			Positive.	Negative.	Total.
City Hospitals	...	...	89	724	813
Private Practitioners	...	...	226	817	1,043
			—	—	—
Totals	...	...	315	1,541	1,856
			==	==	==

(f) Anthrax Infection : Nine specimens of tissues, swabs, etc., were examined, and all were negative.

(g) Miscellaneous : There were 147 specimens of Tissues, Secretions, Fluids, etc., examined chiefly for the City Hospitals.

It is worthy of note that there has been a fall of almost 1,500 in the number of swabs examined for Diphtheria from the City Hospitals, and also slight decreases in examinations for typhoid, and tuberculosis. This, I take it, is an indication of a satisfactory fall in the occurrence of Infectious Diseases in the City during the year.

Venereal Diseases—

The following are the numbers and particulars of the specimens examined for the Liverpool Clinics, Hospitals, and Private Practitioners :—

Detection of Spirochaetes	...	...	...	...	34
Detection of Gonococci	...	...	...	...	516
Wassermann Reaction for Syphilis	...	...	...	...	5,121
Still-born Infants	...	...	...	...	438
Ophthalmia Neonatorum	...	...	...	...	81
					—
Total	...	...	...	...	6,190
					==

As the majority of the specimens are sent from patients suspected to be suffering from Syphilis, or undergoing treatment, several specimens

of blood may be sent from one case at different times, and, therefore, any percentages as to positive and negative results would be of no value.

Of the 438 Still-born Infants examined 30 gave positive evidence of the presence of Syphilis (*i.e.*, nearly 7 per cent.), and 21 were suspicious. In two of these suspicious cases the blood taken from the mother gave a positive Wassermann Reaction, and one gave a slightly positive Reaction.

Of the 81 cases of Ophthalmia Neonatorum 21 shewed the presence of Gonococcus, *i.e.*, about 25 per cent.

Material from Infectious Diseases in Animals—

(a) Tissues, etc., for Tubercle: 17 specimens were examined, but there was no evidence of *B. tuberculosis* in any of them.

(b) Anthrax Infection: Wool, Hides, Hair, etc., : 12 specimens were examined for the Public Health Department, 1 was positive, and the others were all negative.

Animal Foods, etc. : The 16 samples examined were all negative.

Shaving Brushes : The 96 brushes examined were all negative.

Tissues, etc. : 6 specimens were examined, and each was negative.

Other Specimens—

The following were examined for the Baths and Wash-houses Department :—

4 specimens of water from Public Swimming Baths;

4 specimens of Disinfectants.

There were no organisms present in any of the waters which were likely to cause disease, and the general bacterial content of the water was not abnormally high.

The object of examining the disinfectants was to test the efficiency of them, and to compare one with the other, in order that the best for the purpose of disinfection might be employed, and also for the purpose of seeing that the guaranteed standard was maintained.

SUMMARY OF EXAMINATIONS DURING THE YEAR 1922.

Description of Specimens.										Numbers.
Milks and Other Food-stuffs	...	...	...	...	...	...	...	...	...	1,085
Waters	...	...	...	...	...	...	...	...	...	411
Rats, Mice, etc.	...	...	...	...	...	...	...	...	...	11,318
Material from Infectious Diseases in Man :—										
Swabs for Diphtheria	...	...	...	...	...	...	...	...	...	6,876
Urine for Diphtheria	...	...	...	...	...	...	...	...	...	110
Blood for Typhoid Fever	...	...	...	...	...	...	...	...	...	87
Urine and Faeces for Typhoid Fever	...	...	...	...	...	...	...	...	...	160
Sputa for Tuberculosis	...	...	...	...	...	...	...	...	...	1,856
Anthrax Infection	...	...	...	...	...	...	...	...	...	9
Miscellaneous	...	...	...	...	...	...	...	...	...	147
Venereal Diseases	...	...	...	...	...	...	...	...	...	6,190
Material from Diseases in Animals	...	...	...	...	...	...	...	...	...	187
Other Specimens	...	...	...	...	...	...	...	...	...	8
TOTALS										28,444

DISEASES OF ANIMALS.

THE GLANDERS AND FARCY ORDER OF 1907.

During the year 1922 the City was again entirely free from the disease.

Immediate notification of suspected glanders is received either from the owner, police, or the veterinary surgeon who may be called in to the case. As a further safeguard, the Veterinary Department examine the lungs of all equines sent to the horse slaughterer's yard (there is only one in the city for this purpose), and it is by these inspections that unreported cases can be discovered.

This precaution is also taken to ensure owners being notified of the existence of the disease which may be in a latent state, and to detect unscrupulous persons who may not conform to the requirements of the Order.

The following table gives the number examined during the past three years:—

Year	Lungs Examined.	Affected.	Not Affected.
1920	1,305	—	1,305
1921	1,139	—	1,139
1922	996	—	996

INSPECTION OF HORSE AUCTIONS.

The sale yards in the City have been regularly visited and the animals exposed for sale therein examined for the presence of any contagious disease, under the Glanders Order of 1907, Parasitic Mange Orders of 1911 and 1918, and the Epizootic Lymphangitis Order, 1905; also as to their fitness to travel in accordance with the Horses (Importation and Transit) Order of 1913, and the Protection of Animals Act of 1911.

There were 4,540 animals examined, all of which were found to be free from contagious disease.

MARKET INSPECTION.

The following number of animals were examined at the Liverpool Cattle Market during the year 1922. The figures for 1921 were also given for comparison:—

	1921.	1922.
Cattle	3,946	1,965
Sheep	44,077	41,622
Pigs	399	—
Other Animals	—	—
Total	48,422	43,587

THE PARASITIC MANGE ORDER OF 1911 AND AMENDMENTORDER OF 1918.

Under this Order, immediate notification of actual or suspected cases of mange in horses is received from the owner, police, horse slaughterers, or veterinary surgeons, who may be called in to the case. The suspected animals are then examined by the Veterinary Department, and also the entire stud when at rest. Affected animals are immediately isolated and kept under observation until the disease has disappeared. Thorough disinfection of the premises, harness, utensils, feeding troughs, etc., is carried out under the supervision of the veterinary inspectors.

It was not deemed necessary to institute any prosecutions under the Order during the year.

The total number of outbreaks on premises where the disease was found to exist was 36, and the number of visits paid to these premises was 324.

The following table shows the figures for 1922, with the previous four years for comparison, from which it will be seen that the disease appears to be well under control.

Year.	Number of Outbreaks.	Number of Animals and Carcases Examined.	Number affected or suspected.	Recovered.	Died or Slaughtered.
1918	105	5,864	196	142	54
1919	268	3,213	493	358	135
1920	221	1,921	263	189	74
1921	58	847	73	55	18
1922	36	362	44	33	11

THE ANTHRAX ORDER OF 1910.

A number of suspected cases of Anthrax were investigated by the Health Department under this Order. Of these, 23 were referred to the Veterinary Department and, on microscopical examination, Anthrax was suspected to exist in 3 cases. These were reported to the Ministry of Agriculture and Fisheries in accordance with the Order and all were confirmed.

In connection with the spread of Anthrax to farm animals owing to the contamination of cattle food products with the spores of the bacillus during shipment in foreign parts and during the voyage, the staff of the City and Port have kept this matter constantly before them, and systematic enquiries have been made as to the possibility of the contamination of cattle food products. In addition, the Ministry of Agriculture and Fisheries have issued a notice to shipowners and others concerned pointing out that special precautions should be adopted when cargo containing animal products likely to be infected (such as hides, hair, wool, etc.) is carried in the holds and other parts of vessels before such places are used for carrying any cargo to be utilised as cattle food.

THE RABIES ORDER OF 1897.

Eleven suspected cases of Rabies were dealt with under this Order. These were examined by the Veterinary Department and certified to be free from Rabies.

FOOT-AND-MOUTH DISEASE ORDER OF 1895.

Foot-and-Mouth Disease unfortunately made its appearance during the year. The first intimation was reported to the Veterinary Department by a veterinary surgeon called in to attend a cow.

Three premises were infected; two from cattle from affected farms in Westmorland and Cheshire, and the third being an extension of the disease from one of the affected animals.

All in-contact animals were slaughtered, making a total of 37.

Owing to the widespread nature of the outbreak, the Veterinary Department were invested with powers of veterinary inspector of the Ministry of Agriculture and Fisheries for the districts.

A further outbreak occurred in the Litherland district in June. The disease, however, did not occur within the City, but the outbreak necessitated a large number of visits and inspections of premises owing to the movement of animals and persons.

Numerous orders were issued by the Ministry necessitating a large number of inspections of premises where suspected animals were housed.

THE IMPORTATION OF CANINE ANIMALS ORDER OF 1909.

This Order was issued by the Ministry of Agriculture in 1909 to control the importation of animals such as wolves and jackals, and so prevent the introduction of rabies by animals other than dogs whose importation was already controlled by the Importation of Dogs Order of 1901.

No examinations were made under this Order during the year.

THE PROTECTION OF ANIMALS ACTS, 1911.

Under this Act the Police have power to call in a veterinary surgeon in cases of cruelty and act upon his advice. The Veterinary Department is consulted under the Act.

EXAMINATION OF HORSES FOR HUMAN FOOD.

There were two shops in the City licensed under the Horse Flesh Act of 1889 for the sale of horse beef for human food at the end of the year.

Premises have been set apart at three slaughter-houses, viz., Carruthers Street, Foley Street, and High Street, Wavertree, for the slaughter of the horses and dressing of the carcasses.

The animals deemed suitable for human consumption are first submitted whilst alive to veterinary examination, and after slaughter the carcasses are examined by the Inspectors of the Medical Officer of Health, and also in many cases by the Veterinary Inspector.

There were 1,926 animals examined by the Veterinary Inspector, 7 of which were condemned alive as being unfit for slaughter for human consumption. Of the remaining 1919 animals, 1,863 of these were passed for human consumption by the Inspectors of the Medical Officer of Health and 56 were condemned.

The Corporation of Liverpool makes a yearly donation to the Funds of the Royal Society for the Prevention of Cruelty to Animals (Liverpool Branch), and the Liverpool Dogs' Home, on account of the work done for the Health and Watch Committees, and the following reports from their various Liverpool Centres may be of interest :

LIVERPOOL CATS' SHELTERS.

41, Russell Street; 90, Smith Street; 171, Mill Street.

The increasing service rendered by this Institution is shewn by the fact that during 1922 the total number of cats humanely destroyed was no less than 21,563, an increase of some 6,000 over the previous year's figure. A very large proportion of these animals are diseased and injured in various ways, and the work undoubtedly contributes to the health and well-being of the community. On receipt of a postcard addressed to the Caretaker, 41, Russell Street, Liverpool, the Society's van will call for an unwanted cat.

LIVERPOOL HORSES' REST, BROAD GREEN.

66 animals benefited by varying periods of rest on this farm. In many cases they were completely restored to useful service. Sometimes the owners, almost all poor people, are furnished with a loaned animal which they find of the utmost service in enabling them to carry on during their own animal's convalescence.

LIVERPOOL ANIMALS' HOSPITAL (ANIMALS' WAR MEMORIAL), LARCH LEA.

2,800 attendances were recorded during 1922, the greatest care being taken only to handle animals belonging to those who cannot afford to pay Veterinary charges.

These three Institutions are all alike conducted by the Liverpool Branch, R.S.P.C.A.

LIVERPOOL DOGS' HOME, EDGE LANE.

Despite the systematic and cheap collection of unwanted animals from owners' houses, and the utmost care in furnishing animals only to suitable owners, the number of dogs received during 1922 is far in excess of the number recorded for several years past, totalling 6,654. But it is gratifying to notice that, while the number brought to the Home from the streets, through the activity of the Police, was 3,151, the number brought direct was 3,177, the owners thus shewing their appreciation of the arrangements for the cheap and humane removal of unwanted animals. It will thus be seen that more than half of the community's superfluous animals were promptly and humanely destroyed without becoming strays.

CLEANSING AND SCAVENGING.

The City Engineer has kindly supplied the following information, which indicates the operations carried out by the cleansing staff under his control:—

The work of the Department consists of cleansing and watering the 574 miles of streets within the City, together with their back passages, the periodical emptying of ash-bins, street gullies, street and court-bins and ashpits, and the disposal of the refuse collected therefrom, etc. During 1922 the quantity of refuse collected and disposed of amounted to approximately 385,000 tons, the quantity removed per working day averaging 1,254 tons.

The whole of the 574 miles of streets with their passages are swept weekly, the principal streets, and streets in congested areas, receiving constant daily attention. In addition, certain streets and passages are washed by hose pipe at night time. During 1921 street washing was carried out as follows:—

32 streets washed once a week;

7 streets washed twice a week;

4 streets washed three times a week; and

345 streets washed as occasion required;

and all passages and tunnel entrances to courts were also regularly washed.

Two motor sweeping machines are employed regularly, and sweep approximately 20 miles of roadway nightly.

On Sunday mornings a number of the principal streets are cleansed.

During 1922, approximately 54,000 tons of street sweepings were collected and disposed of as manure.

In connection with street watering upwards of 13 million gallons of water were distributed during the season, in addition to the large quantity used for street washing.

1,049,164 square yards of carriageway were treated with dust-laying compositions, of which 22,442 square yards were in Sefton and Newsham Parks.

The frequent flushing of trough water closets is a sanitary measure, this type of closet being provided principally in the more densely

populated areas of the City. The number of trough water closets in existence on 31st December, 1922, was 689.

There are 32 underground urinals with 275 stalls and 150 overground urinals with 546 stalls in Liverpool, which are cleansed and disinfected at least once daily. During the summer season a large number of urinals and trough water closets are cleansed and disinfected twice daily. All private, domestic and office drains are flushed twice a year by the City Engineer's staff.

An improved type of fixture ash-bin was first supplied to Liverpool premises in 1898, and at the end of 1922 the number of bins in use of this type was 85,900, and the number of ashpits had been reduced from 65,000 to approximately 6,900. More than 53,000 loose bins had been supplied to premises unsuitable for fixture bins. In the year 1900 an improved sanitary ash-bin was introduced for the use of courts, some of which have been removed owing to property being demolished. The number in use at the end of the year was 1,347, which are emptied daily. Ashbins and ashpits at domestic premises are emptied approximately once weekly. The Bell-Cart service provides for the daily removal of domestic refuse from shops, business premises, and dwelling-houses, where no provision can conveniently be made for the storage of this description of refuse. This service has to be conducted within limited hours during the morning to suit the convenience of occupiers and the exigencies of business.

The night service has now been discontinued, most of the ashpits having been abolished and bins substituted. Both bins and ashpits are now emptied during the early morning.

Horse middens are emptied weekly and abattoir garbage is removed nightly, 2,865 tons of abattoir garbage being removed during 1922.

All ashpit and ashbin refuse is tipped direct into the carts and motors, and all loaded carts and motors traversing the streets are covered.

The refuse collected is disposed of by burning at six destructors, by disposing at sea, by sale to farmers, and by other use for agricultural purposes. During the year 167,616 tons were burned at the destructors, 49,834 tons were deposited at sea by hopper barge, 37,786 tons were sold to farmers, and 79,596 tons were otherwise disposed of for filling up pits, and agricultural purposes, etc. In addition, approximately 50,000 tons of clinker residue from destructors were used almost entirely in the construction and maintenance of roads, tramways, and in the manufacture of mortar and concrete slabs, etc.

METEOROLOGY.

Mr. W. E. Plummer, M.A., F.R.A.S., Astronomer to the Mersey Docks and Harbour Board, has kindly furnished the following tables relating to Meteorological observations made by him at the Liverpool Observatory, Bidston:—

LIVERPOOL OBSERVATORY, BIDSTON, BIRKENHEAD.

Latitude $53^{\circ} 24' 5''$ N. Longitude $3^{\circ} 4' 20''$ W.

Height above the Mean Level of the Sea 202 feet.

1922.	Barometer. Mean.	Temperature. Mean.	RAINFALL.		Mean Humidity of the air (Complete Satura- tion equal 100).
			Amount.	No. of days on which $\cdot 01$ in. or more fell.	
	Inches.	Degrees.	Inches.		
January	29·752	39·4	3·581	22	88
February	29·786	40·2	2·935	20	85
March	29·878	40·8	1·513	13	79
April	29·754	42·8	1·884	15	78
May	30·069	54·6	1·393	10	72
June	29·979	56·4	1·546	11	73
July	29·861	56·4	3·565	18	75
August	29·964	56·5	3·113	18	78
September	29·958	54·5	2·297	14	80
October	30·094	47·9	0·314	4	78
November	30·170	45·0	1·626	13	86
December	29·742	43·8	2·933	19	86

DIFFERENCE FROM THE AVERAGE QUANTITIES OBSERVED DURING THE
LAST 55 YEARS.

1922.	BAROMETER.		TEMPERATURE.		RAINFALL.	
	Above Average.	Below Average.	Above Average.	Below Average.	Above Average.	Below Average.
	Inches.	Inches.	Degrees.	Degrees.	Inches.	Inches.
January .....	...	0·181	0·2	...	1·416	...
February .....	...	0·140	...	1·0	1·232	...
March .....	...	0·001	...	1·4	...	0·373
April .....	...	0·153	...	4·5	0·225	...
May	0·098	...	2·7	...	...	0·540
June .....	...	0·015	...	1·0	...	0·503
July .....	...	0·089	...	4·4	0·891	...
August	0·045	...	...	4·0	0·065	...
September .....	...	0·011	...	1·7	...	0·438
October	0·207	...	...	1·7	...	3·010
November	0·269	...	1·8	...	...	0·833
December .....	...	0·101	3·9	...	0·181	...

OBSERVATIONS OF VELOCITY OF WIND.

1922.	Average Hourly Velocity for Month.	Maximum Hourly Velocity.	Date.	Minimum Hourly Velocity.	Date.
	Miles.	Miles.		Miles.	
January	21·2	60	Jan. 1	0	January 6, 31.
February	17·7	45	Feb. 3	0	February 17.
March	14·9	42	Mar. 8	0	March 14, 23, 26.
April	14·6	52	April 24	0	April 11.
May	12·1	45	May 5	0	May 25, 28, 30, 31.
June	16·6	47	June 25	0	June 5.
July	15·4	45	July 6	0	July 5, 11, 23.
August	13·9	45	Aug. 23	0	August 3, 11.
September	14·4	51	Sept. 20	0	Sept. 3, 7, 8, 13, 24.
October	12·6	33	Oct. 16, 17	0	October 8,
November	16·3	46	Nov. 26	0	November 13, 20.
December	18·3	51	Dec. 5	0	December 10, 15.

ATMOSPHERIC POLLUTION.

The analyses of the deposits collected from the atmospheric pollution gauge at the North Tuberculosis Dispensary in Netherfield Road, are shown in the table below. This is the second complete year's record since the gauge was reinstalled at the end of the war. It will be seen that deposits of soot and other material fell on every square mile of that part of the City in amounts averaging 46 tons per month.

During the coal strike of 1921 there was a marked and progressive reduction in the quantity of these suspended matters. There was also a corresponding and remarkable increase in the clarity of the atmosphere. This was mainly due to a diminished production of smoke by domestic coal consumers, as there was little, if any, reduction in the amount of smoke given off from commercial chimneys. There is no reason why this improvement in the amount of atmospheric impurities which resulted from lack of coal should not be attained voluntarily by the increased use of gas, electricity and anthracite coal, and the various smoke-consuming devices. There can be little doubt that this would be of great benefit to the health, as well as the amenities of the community.

ATMOSPHERIC POLLUTION, 1922.

RESULT OF ANALYSES BY THE CITY ANALYST (RESULTS CALCULATED IN TONS PER SQUARE MILE).													
	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Totals for 12 months.
Sum Total Solids	40.559	41.886	46.111	65.850	45.222	39.084	59.042	42.862	39.045	51.364	34.631	45.729	551.385
UNDISSOLVED MATTER—													
Tarry Matter and Bitumen	0.454	0.656	0.469	0.546	0.475	0.390	0.617	0.461	0.403	0.168	0.760	0.767	61.66
Other Organic Matter	5.648	7.822	9.078	13.413	9.130	8.101	8.241	10.101	12.281	29.739	7.536	11.585	132.675
Mineral Matter	14.871	16.568	24.110	32.889	25.621	18.307	30.631	17.549	12.696	14.226	11.844	12.085	231.397
Total Undissolved Matter ...	20.973	25.046	33.657	46.848	35.226	26.798	39.489	28.111	25.380	44.133	20.140	24.437	370.238
DISSOLVED MATTER—													
Organic Matter by Ignition	8.198	5.480	4.508	7.810	3.397	5.225	6.898	5.049	5.010	2.037	5.798	5.322	64.732
Mineral Matter	11.388	11.360	7.946	11.192	6.599	7.061	12.655	9.702	8.655	5.194	8.693	15.970	116.415
Total Dissolved Matter	19.586	16.840	12.454	19.002	9.996	12.286	19.553	14.751	13.665	7.231	144.91	21.292	181.147
Alkalinity as NH ₃	—	—	0.03	—	0.063	0.130	0.143	0.063	—	0.046	—	—	0.475
Acidity as H ₂ SO ₄	0.553	0.285	—	0.278	—	—	—	—	0.265	—	0.318	0.663	23.62
Chlorine as Cl ₁	3.715	2.017	1.672	2.121	0.989	2.180	1.938	1.790	1.451	0.721	2.432	4.353	25.379
Ammonia as NH ₃	0.617	0.364	0.273	0.487	0.318	0.624	0.826	0.540	0.696	0.181	0.533	0.831	62.90
Sulphate as SO ₃	5.472	5.041	3.794	5.049	2.915	3.057	5.824	4.067	3.442	2.420	4.386	4.651	50.128
Lime as CaO	1.137	2.152	1.820	2.081	1.496	1.229	2.876	0.969	1.137	0.535	1.313	1.326	18.071
RAINFALL { Millimetres ...	89.32	76.81	42.11	51.04	39.19	60.22	112.80	76.10	89.32	7.27	51.68	104.37	800.23
{ Inches	3.52	3.02	1.66	2.01	1.54	2.37	4.44	3.0	3.52	0.28	2.03	4.11	31.50

HOUSING.

Between the years 1865 and 1904, approximately 6,300 houses unfit for human habitation were dealt with by Presentment under the Local Acts, and these were eventually demolished.

Operations under the Housing of the Working Classes Acts were commenced in 1901, and up to the present 2,944 insanitary houses have been dealt with as "Unhealthy Areas" under this Act.

Since the year 1906, "Closing Orders" under the Housing of the Working Classes Act were made in respect to 1,760 houses; of this number 1,487 were demolished, and 273 were rendered sanitary.

In addition, 1,020 were dealt with as the result of a circular letter, or on the action of the Health Committee in asking for more closet accommodation, or by private improvements; of this number 615 were demolished and 405 were rendered sanitary.

UNHEALTHY AREAS DEALT WITH.

Date of Representation.	Area.	Population.	Houses.	Dwellings Erected.
July, 1901 ...	Hornby Street ...	2,431	534	455
Do. ...	Upper Mann Street ...	743	176	88
September, 1906 ...	Burlington Street ...	607	144	114
March, 1907 ...	Beau Street ...	532	128	...
Do. ...	Bevington Street ...	1,154	295	224
Do. ...	Holly Street ...	563	124	78
Do. ...	Frank Street ...	627	127	68
Do. ...	Grafton Street ...	304	70	60
August, 1907 ...	Saltney Street... ..	88	68	48
June, 1912 ...	Prince Edwin Street ...	737	187	...
Do. ...	Rathbone Street ...	445	129	...
Do. ...	Mason Street ...	301	107	28
Do. ...	Saltney Street... ..	415	93	...
Do. ...	Blenheim Street ...	230	48	In progress
Do. ...	Penrhyn Street ...	488	116	26
Do. ...	Gore Street ...	78	76	24
Do. ...	Sparling Street ...	153	33	16
Do. ...	Jordan Street ...	Nil	Nil	31
June, 1922 ...	Burlington Street ...	1,407	307	...
Do. ...	Hopwood Street ...	343	52	...
January, 1923 ...	Great Richmond Street ...	148	35	...
Do. ...	Rankin Street... ..	476	96	...
		12,270	2,944	1,260

With regard to Beau Street and Saltney Street Areas, in respect to which the Official Representation was made in 1907, these Areas still remain to be finally disposed of.

BEAU STREET AREA.

The houses on this Area have been demolished and the site cleared; the question of re-building on this Area has been delayed owing to proposed street works. There is no variation from the original schemes of street improvement, but the work has not been commenced.

SALTNEY STREET AREA.

The sanction of the Ministry of Health is still awaited in respect to the purchase of several properties on this Area. Although a large number of houses on this Area are still occupied, the erection of new dwellings might be considered on a portion of the site, as the properties in Great Howard Street and Dublin Street are unoccupied and derelict.

PRINCE EDWIN STREET, RATHBONE STREET, BLENHEIM STREET.

The Official Representation in respect to these Areas was made in June, 1912; the present position is as follows:—

PRINCE EDWIN STREET.

The question of street widening for a long while occupied the attention of a Special Sub-Committee, but on 5th May, 1922, an adjustment was made allocating the relative portions of the Area to the proposed new road, and to the proposed new buildings respectively. More than one-half of the houses on this Area have been demolished, one hundred houses are still occupied. All the property has been purchased with the exception of two small blocks, and the Ministry of Health have approved of the plans indicating the erection of 60 dwellings. The present need of housing accommodation does not permit of delay in the completion of the proposed new dwellings.

RATHBONE STREET AREA.

With regard to this Area, more than one-half of the houses have been demolished, but it still awaits final adjustment.

BLENHEIM STREET AREA.

The work in connection with the erection of 18 cottage flats on this Area is well advanced, and the houses are expected to be ready for occupation at any early date.

In the Annual Report for 1920, all the insanitary houses still existing in various parts of the City which could be grouped together as suitable for being dealt with as Unhealthy Areas, were reported on, and the Medical Officer expressed the opinion that a preliminary step should then be taken in respect to Unhealthy Areas which had not been dealt with, in order to obtain the full benefit of the financial assistance given by the Ministry of Health towards the reconstruction of Unhealthy Areas.

In November, 1920, a draft Official Representation was submitted in respect to these Areas, and on 25th March, 1921, the Housing Committee decided that certain Areas should be considered with a view to making an Improvement Scheme, and the remainder dealt with by Closing Order.

At a Meeting of the City Council on 6th April, 1921, the proceedings of the Housing Committee relative to these properties were, by the permission of the Council, withdrawn.

The Draft Official Representation of the Medical Officer of Health in regard to 13 unhealthy areas referred to in the Annual Report for 1921, has been further considered, and the City Council have now approved of the Official Representations in respect to four of these areas, namely, Burlington Street, Hopwood Street, Great Richmond Street, and Rankin Street.

CITY OF LIVERPOOL.

HOUSING OF THE WORKING CLASSES ACTS, 1890 TO 1921.

BURLINGTON STREET AND HOPWOOD STREET UNHEALTHY AREAS.

Official Representation of the Medical Officer of Health.

To the Urban Sanitary Authority

of the City of Liverpool.

I, EDWARD WILLIAM HOPE, Medical Officer of Health for the City of Liverpool, do hereby represent that, in my opinion, within certain Areas in the district of the Urban Sanitary Authority of the City of Liverpool,

described in the Schedule hereto, there are (*a*) certain houses, courts and alleys which are unfit for human habitation, and that (*b*) the narrowness, closeness, and bad arrangements and bad condition of the streets and houses and groups of houses within such Areas, and the want of light, air, ventilation, and proper conveniences and other sanitary defects, or one or more of such causes, are dangerous or injurious to the health of the inhabitants, either of the buildings in the said Areas or of the neighbouring buildings, and that the most satisfactory method of dealing with the evils connected with such houses, courts or alleys, and the sanitary defects in such Areas, is an improvement scheme for the re-arrangement and re-construction of the streets and houses, within such Areas, or of some of such streets and houses.

BURLINGTON STREET AREA.

An Area on the east side of Vauxhall Road, commencing at No. 202, Vauxhall Road, and running in a northwardly direction along Vauxhall Road to and including the premises No. 226, Vauxhall Road, thence turning and running in an eastwardly direction along the south side of Green Street to and including the premises No. 95, Limekiln Lane, thence turning and running along the west side of Limekiln Lane to and including the premises No. 63, Limekiln Lane, thence turning and running in a westwardly direction along the north side of Bond Street and including the school and playground to Titchfield Street, thence turning in a northwardly direction along the boundary wall of the playground and the school to Back Bond Street, thence turning and running in a diagonal direction to the south-east corner of the premises No. 33, Titchfield Street, thence turning and running in a westwardly direction to and including the premises No. 202, Vauxhall Road aforesaid.

Also an Area on the east side of Vauxhall Road, commencing at the corner of Bond Street to and including the premises No. 198, Vauxhall Road, thence running in an eastwardly direction along the south side of Bond Street to and including the premises No. 74, Bond Street, thence turning and running in a southwardly direction to and including the premises No. 19, Titchfield Street, thence turning and running in a westwardly direction along the north side of Eldon Street to Vauxhall Road, thence turning and running in a northwardly direction along the east side of Vauxhall Road to and including the premises No. 198, Vauxhall Road aforesaid.

NOTE.—The boundaries of this Area have been amended by the Improvement Scheme, and the statistics on page 223 relate to the amended Area.

HOPWOOD STREET AREA.

An Area on the south side of Hopwood Street, beginning with and including the premises No. 82, Hopwood Street, thence running in an eastwardly direction to Scotland Road, to and including No. 345, Scotland Road, thence turning and running in a southwardly direction to Benledi Street, and including the premises No. 337, Scotland Road, thence turning and running in a westwardly direction to and including the premises No. 57, Benledi Street, thence turning and running in a northwardly direction to the rear boundary wall of No. 4 Court, Hopwood Street, thence turning and running in a westwardly direction along the boundary wall to the centre line of No. 2 Court, Hopwood Street, thence turning and running in a northwardly direction to Hopwood Street, thence turning and running in an eastwardly direction to the premises No. 82, Hopwood Street aforesaid.

 GREAT RICHMOND STREET AND RANKIN STREET UNHEALTHY AREAS.

Official Representation of the Medical Officer of Health.

To the Urban Sanitary Authority
of the City of Liverpool.

I. EDWARD WILLIAM HOPE, Medical Officer of Health for the City of Liverpool, do hereby represent that, in my opinion, within certain Areas in the district of the Urban Sanitary Authority of the City of Liverpool, described in the Schedule hereto, there are (a) certain houses, courts and alleys which are unfit for human habitation, and that (b) the narrowness, closeness, and bad arrangements and bad condition of the streets and houses and groups of houses within such Areas, and the want of light, air, ventilation, and proper conveniences and other sanitary defects, or one or more of such causes, are dangerous or injurious to the health of the inhabitants, either of the buildings in the said Areas or of the neighbouring buildings, and that the most satisfactory method of dealing with the evils connected with such houses, courts or alleys, and the sanitary defects in such Areas, is an improvement scheme for the re-arrangement and re-construction of the streets and houses, within such Areas, or of some of such streets and houses.

GREAT RICHMOND STREET AREA.

An Area on the north-east side of St. Anne Street, commencing at No. 106, St. Anne Street, and running in a north-eastwardly

direction to and including the premises No. 32, Great Richmond Street, thence turning and running in a south-eastwardly direction along the south-west side of the passage adjoining No. 32, Great Richmond Street to the rear wall of the premises No. 131, Richmond Row, thence turning and running in a south-westwardly direction along the rear wall of the premises Nos. 129 to 131, Richmond Row, thence turning and running in a south-eastwardly direction along the boundary wall of No. 129, Richmond Row, thence turning and running in a south-westwardly direction along the rear of the boundary wall of No. 127, Richmond Row, thence turning and running in a north-westwardly direction along the boundary wall of No. 125, Richmond Row, to the north-west side of the passage, thence running in a south-westwardly direction along the rear of the property in 4 and 6 Courts, Great Richmond Street to St. Anne Street, to and including No. 98, St. Anne Street, thence turning and running in a north-westwardly direction to and including the premises No. 106, St. Anne Street aforesaid.

RANKIN STREET AREA.

An Area on the north-east side of Thornton Place, commencing at the centre of Romley Place and running in a straight line in a north-eastwardly direction to the rear wall of the property in Wellington Gardens, thence turning and running in a north-westwardly direction to the boundary wall of Wellington Gardens, thence turning and running in a north-eastwardly direction along the boundary wall of Wellington Gardens, thence turning and running in a north-westwardly direction along the boundary wall of Wellington Gardens, thence turning and running in a north-eastwardly direction across the passage to the north-east boundary of Wellington Gardens, thence turning and running in a south-eastwardly direction to the rear wall of the premises No. 66, Wellington Road, thence turning and running in a north-eastwardly direction along the rear wall of Nos. 66 to 70, Wellington Road, thence turning and running in a north-westwardly direction along the rear wall on the south-west side of property in Corwen Place and Carnarvon Place to and including the premises No. 72, Wellington Road, thence turning and running in a north-eastwardly direction to Bessemer Street, to and including the premises No. 2, Bessemer Street, thence turning and running in a south-eastwardly direction along the south-west side of Bessemer Street to and including the premises No. 32, Bessemer Street, thence turning and running along the north-west side of Rankin Street in a southwardly direction to Thornton Place, and including the premises, No. 21, Thornton Place, thence turning and running along the north-east side of Thornton Place in a north-westwardly direction to the centre of Romley Place aforesaid.

REPORT ON BURLINGTON STREET AREA.

In this Area, which contains 16,432 square yards, there are 307 houses, of which 201 are insanitary, the majority of the insanitary houses being of the back-to-back type without through ventilation, yard space, and separate closet accommodation.

The Area is situated in a congested district, and includes certain land now vacant and disused, together with a school erected in or about 1836, which is unfit for its purpose and is disused. The inclusion of this vacant land and school will afford facilities for the erection of suitable dwellings, and consequently no displacement of the people need take place until new dwellings are available.

STATISTICS.

	Entire City.	Area Burlington Street.
Population	823,095	1,409
Average Annual General Death Rate for the six years 1917 to 1922 (per 1,000)...	16·0	30·51
Average Annual Phthisis Death Rate for the six years 1917 to 1922 (per 1,000)...	1·4	2·72
Average Annual Infant Mortality Rate for the six years 1917 to 1922 (per 1,000 births)...	111·0	172·41
Average Annual Birth Rate for the six years 1917 to 1922 (per 1,000)	25·0	44·59

There are three licensed premises on this Area, which are included in the Official Representation.

REPORT ON HOPWOOD STREET AREA.

This Area is situated on the south side of Hopwood Street, and a considerable portion of the property has been purchased by the Corporation, and is now in possession.

The total Area contains 3,650 square yards, and there are 64 houses on the Area. Of this number 52 are insanitary, being of the back-to-back type, without through ventilation, yard space, and separate closet accommodation.

The majority of the insanitary houses are situated in confined courts, but all of them are occupied.

STATISTICS.

	Entire City.	Area Hopwood Street.
Population	823,095	343
Average Annual Death Rate for the six years 1917 to 1922 (per 1,000)	16·0	35·47
Average Annual Phthisis Death Rate for the six years 1917 to 1922 (per 1,000)	1·4	3·88
Average Annual Infant Mortality Rate for the six years 1917 to 1922 (per 1,000 births)	111·0	162·16
Average Annual Birth Rate for the six years 1917 to 1922 (per 1,000)	25·0	35·95

REPORT ON GREAT RICHMOND STREET AREA.

This is a small Area situated on the north-east side of St. Anne Street, and containing 1,420 square yards. One-third of this Area is vacant land. There are at present 35 houses on this Area, 32 of which are insanitary, the majority being of the back-to-back type, situated in close and confined courts, and are without through ventilation, and separate yard space, but all of them are occupied.

STATISTICS.

	Entire City.	Area Gt. Richmond Street.
Population	823,095	148
Average Annual Death Rate for the six years 1917 to 1922 (per 1,000)	16·0	36·03
Average Annual Phthisis Death Rate for the six years 1917 to 1922 (per 1,000)	1·4	3·37
Average Annual Infant Mortality Rate for the six years 1917 to 1922 (per 1,000 births)	111·0	250·0
Average Annual Birth Rate for the six years 1917 to 1922 (per 1,000)	25·0	36·03

REPORT ON RANKIN STREET AREA.

This Area is situated on the north-east side of Thornton Place, and contains 5,100 square yards. There are at present 96 houses on this Area, of which 71 are insanitary, the majority of the insanitary houses being situated in close and confined courts, and without through ventilation, and separate yard space. They are all occupied.

STATISTICS.

	Entire City.	Area Rankin Street.
Population	823,095	476
Average Annual Death Rate for the six years 1917 to 1922 (per 1,000)	16·0	16·10
Average Annual Phthisis Death Rate for the six years 1917 to 1922 (per 1,000)	1·4	0·70
Average Annual Infant Mortality Rate for the six years 1917 to 1922 (per 1,000 births)	111·0	117·64
Average Annual Birth Rate for the six years 1917 to 1922 (per 1,000)	25·0	41·06

There are two licensed premises on this Area, which are included in the Official Representation.

BURLINGTON STREET, HOPWOOD STREET,
GREAT RICHMOND STREET AND RANKIN STREET
IMPROVEMENT SCHEMES.

REPORT OF DIRECTOR OF HOUSING.

BURLINGTON STREET AREA.

This Area contains four rectangular blocks of property, two on the south side of Burlington Street, one on the north side of Bond Street, and one between Bond Street and Eldon Street, extending between Vauxhall Road and Limekiln Lane.

The total contents of the Area is 16,432 square yards.

A suggested lay-out for re-building on the site provides for ten blocks of dwellings three storeys high, containing 189 three-bedroom flats, and 18 two-bedroom flats; total 207 dwellings, accommodating 1,035 persons, assuming five persons per dwelling.

The population to be dispossessed number 1,409 persons.

HOPWOOD STREET AREA.

This Area is situated on the south side of Hopwood Street, north side of Benledi Street, and west side of Scotland Road.

The total contents of the Area is 3,650 square yards.

The plan for re-building provides for one block of buildings fronting Hopwood Street, three storeys high, with 24 three-bedroom flats, and 6 two-bedroom flats, total 30 dwellings; and one block of buildings fronting Scotland Road, three storeys high, with 4 three-bedroom flats and 2 shops; making a total of 34 dwellings and 2 shops, and accommodating 170 persons, assuming five persons per dwelling.

The population to be dispossessed number 343 persons.

GREAT RICHMOND STREET AREA.

This Area is situated on the east side of St. Anne Street and the south side of Great Richmond Street.

The total contents of the Area is 1,420 square yards.

The suggested lay-out for re-building on the site provides for one block of buildings, three storeys high, containing 12 three-bedroom flats and 6 two-bedroom flats; total 18 dwellings, accommodating 90 persons, assuming five persons per dwelling.

The population to be dispossessed number 148 persons.

RANKIN STREET AREA.

This Area is situated on the north-west side of Rankin Street, south-west side of Bessemer Street, north-east side of Thornton Place, and south-east side of Wellington Road.

The total contents of the Area is 5,100 square yards.

A suggested lay-out for re-building on the site provides for three blocks of buildings, three storeys high, containing 18 three-bedroom flats and 30 two-bedroom flats; total 48 dwellings, accommodating 240 persons, assuming five persons per dwelling.

The population to be dispossessed number 476 persons.

The total cost of acquiring the Areas proposed to be dealt with under Part I of the 1890 Act, and in accordance with the Schedule under Section 9 (1), Paragraph 2, of the Housing and Town Planning Act, 1919, will amount to approximately £16,000, and the cost of the buildings proposed to be erected on the above sites may be taken at approximately £119,000.

REPORT OF TOWN CLERK.

TO THE HOUSING COMMITTEE,

The Town Clerk begs to report that he has considered the Areas mentioned in the Reports of the Medical Officer of Health and the Director of Housing, and is of opinion that those Areas mentioned in the Official Representations of the Medical Officer of Health may be conveniently dealt with by an Improvement Scheme under Part I of the Housing of the Working Classes Act, 1890.

WALTER MOON,
Town Clerk.

THE HOUSING OF THE WORKING CLASSES ACTS, 1890 to 1921.

LIVERPOOL (BURLINGTON STREET, HOPWOOD STREET, GREAT RICHMOND STREET AND RANKIN STREET) IMPROVEMENT SCHEME, 1923.

Scheme made by the Lord Mayor, Aldermen and Citizens of the City of Liverpool, acting by the Council as the Local Authority under Part I of the Housing of the Working Classes Act, 1890, as

amended by subsequent Acts, for the improvement of certain unhealthy areas within the City of Liverpool.

1. This scheme may be cited as the Liverpool (Burlington Street, Hopwood Street, Great Richmond Street and Rankin Street) Improvement Scheme, 1923.

2. In this scheme the "City" means the County Borough of Liverpool, the "Corporation" means the Lord Mayor, Aldermen and Citizens of the City, the "Town Clerk" and the "Director of Housing" mean respectively the Town Clerk and Director of Housing of the City for the time being, and the plans referred to as "the plans" mean the plans which accompany this scheme.

3. The unhealthy areas included in this scheme comprise:—

Burlington Street,	16,432 square yards or thereabouts.
Hopwood Street,	3,650 ,, ,,
Great Richmond Street,	1,420 ,, ,,
Rankin Street,	5,100 ,, ,,
Total	<hr/> 26,602 ,, ,, <hr/>

And are as follows:—

BURLINGTON STREET AREA.

An area on the east side of Vauxhall Road, commencing at No. 202, Vauxhall Road, and running in a northwardly direction along Vauxhall Road, to and including the premises No. 204a, Vauxhall Road, thence running in an eastwardly direction along the south side of Burlington Street across Titchfield Street to Limekiln Lane, to and including the premises No. 162, Burlington Street, thence turning and running in a southwardly direction along the west side of Limekiln Lane across Back Bond Street to and including the premises No. 63, Limekiln Lane, thence turning and running in a westwardly direction along the north side of Bond Street, and including the school and playground to Titchfield Street, thence turning in a northwardly direction along the boundary wall of the playground and the school to Back Bond Street, thence turning and running in a diagonal direction to the south-east corner of the premises No. 33, Titchfield Street, thence turning and running in a westwardly direction to and including the premises No. 202, Vauxhall Road aforesaid.

Also an area on the east side of Vauxhall Road, commencing at the corner of Bond Street to and including the premises No. 198, Vauxhall Road, thence running in an eastwardly direction along the south side

of Bond Street to and including the premises No. 74, Bond Street, thence turning and running in a southwardly direction to and including the premises No. 19, Titchfield Street, thence turning and running in a westwardly direction along the north side of Eldon Street to Vauxhall Road, thence turning and running in a northwardly direction along the east side of Vauxhall Road to and including the premises No. 198, Vauxhall Road aforesaid.

HOPWOOD STREET AREA.

An area on the south side of Hopwood Street, beginning with and including the premises No. 82, Hopwood Street, thence running in an eastwardly direction to Scotland Road to and including No. 345, Scotland Road, thence turning and running in a southwardly direction to Benledi Street, and including the premises No. 337, Scotland Road, thence turning and running in a westwardly direction to and including the premises No. 57, Benledi Street, thence turning and running in a northwardly direction to the rear boundary wall of No. 4 Court, Hopwood Street, thence turning and running in a westwardly direction along the boundary wall to the centre line of No. 2 Court, Hopwood Street, thence turning and running in a northwardly direction to Hopwood Street, thence turning and running in an eastwardly direction to the premises No. 82, Hopwood Street aforesaid.

GREAT RICHMOND STREET AREA.

An area on the north-east side of St. Anne Street, commencing at No. 106, Saint Anne Street, and running in a north-eastwardly direction to and including the premises No. 32, Great Richmond Street, thence turning and running in a south-eastwardly direction along the south-west side of the passage adjoining No. 32, Great Richmond Street to the rear wall of the premises No. 131, Richmond Row, thence turning and running in a south-westwardly direction along the rear wall of the premises Nos. 129 to 131, Richmond Row, thence turning and running in a south-eastwardly direction along the boundary wall of No. 129, Richmond Row, thence turning and running in a south-westwardly direction along the rear of the boundary wall of No. 127, Richmond Row, thence turning and running in a north-westwardly direction along the boundary wall of No. 125, Richmond Row, to the north-west side of the passage, thence running in a south-westwardly direction along the rear of the property in 4 and 6 Courts, Great Richmond Street, to St. Anne Street, to and including No. 98, St. Anne Street, thence turning and running in a north-westwardly direction to and including the premises No. 106, Saint Anne Street aforesaid.

RANKIN STREET AREA.

An area on the north-east side of Thornton Place, commencing at the centre of Romley Place and running in a straight line in a north-eastwardly direction to the rear wall of the property in Wellington

Gardens, thence turning and running in a north-westwardly direction to the boundary wall of Wellington Gardens, thence turning and running in a north-eastwardly direction along the boundary wall of Wellington Gardens, thence turning and running in a north-westwardly direction along the boundary wall of Wellington Gardens, thence turning and running in a north-eastwardly direction across the passage to the north-east boundary of Wellington Gardens, thence turning and running in a south-eastwardly direction to the rear wall of the premises No. 66, Wellington Road, thence turning and running in a north-eastwardly direction along the rear wall of Nos. 66 to 70, Wellington Road, thence turning and running in a north-westwardly direction along the rear wall on the south-west side of property in Corwen Place and Carnarvon Place to and including the premises No. 72, Wellington Road, thence turning and running in a north-eastwardly direction to Bessemer Street, to and including the premises No. 2, Bessemer Street, thence turning and running in a south-eastwardly direction along the south-west side of Bessemer Street to and including the premises No. 32, Bessemer Street, thence turning and running along the north-west side of Rankin Street in a southwardly direction to Thornton Place, and including the premises No. 21 Thornton Place, thence turning and running along the north-east side of Thornton Place in a north-westwardly direction to the centre of Romley Place aforesaid.

4. The Corporation are of opinion that it is expedient that the remaining parts of the areas comprised in the Official Representations of the Medical Officer of Health should be excluded from the scheme.

5. The Corporation may enter upon and take compulsorily and deal with for the purpose of this scheme all or any of the lands referred to in this scheme, and coloured pink on the said plans.

6. After obtaining possession of the land authorised to be taken by this scheme, the Corporation may remove the whole of the buildings standing thereon, and may make and widen streets and approaches in such lines and situations as the Corporation may prescribe, and may stop up or deviate any street or streets included in any of the areas, and the Corporation shall appropriate other parts of the said land to the erection of dwelling-houses for the accommodation of such number of persons of the working class as, in the opinion of the Corporation, may require such accommodation, and any lands not required for the purposes aforesaid may be appropriated to such public purposes as the Corporation may direct, or be sold, leased, or otherwise disposed of, as the Corporation may think fit.

ESTIMATE OF EXPENSE.

1. The estimated cost of acquiring the lands and buildings shewn upon the deposited plan, and coloured pink, in accordance with the Schedule under Section 9 (1), paragraph 2, of the Housing, Town

Planning, etc., Act, 1919, including the cost of and incidental to the making and confirmation of the scheme, is the sum of £16,000.

2. The estimated cost of laying out and the construction of new streets and the erection of new buildings is the sum of £119,000.

3. No surplus land.

4. No recoupments.

PARTICULARS AND STATEMENTS.

In pursuance of the instructions of the Ministry of Health, dated October, 1919, as to Applications by Urban Sanitary Authorities for the confirmation of Improvement Schemes under Part I of the Housing of the Working Classes Act, 1890, as amended by subsequent Acts.

(The paragraphs are numbered to correspond with the instructions of the Ministry of Health.)

(d) The areas affected by the scheme comprise:—

Burlington Street Area	...	16,432	square yards or thereabouts.
Hopwood Street Area	...	3,650	„ „
Great Richmond Street Area..	1,420	„	„
Rankin Street Area	...	5,100	„ „
Total	...	26,602	„ „

The number of persons of the working class who will be displaced is, as nearly as can be ascertained, including lodgers, in the Burlington Street Area 1,409 persons, in the Hopwood Street Area 343 persons, in the Great Richmond Street Area 148 persons, and in the Rankin Steet Area 476 persons. Total, 2,376 persons. The approximate rents paid by such persons are from 5/- to 10/- per week, free of rates and taxes.

It is intended to provide accommodation for such number of those persons of the working class who will be displaced in the areas affected by the scheme in such place or places either within or without the limits of the said areas as the Ministry of Health, being the confirming authority within the meaning of the above Acts, may require.

After obtaining possession of the land the Corporation propose to remove the buildings standing thereon and afterwards to

appropriate the land for the erection of suitable dwellings, or for any other purpose that they may think desirable, or to dispose of the site by a sale in fee simple or by building leases, as they may deem to be most advantageous.

- (c) (1) The areas included in the Official Representation of the Medical Officer of Health are coloured pink on the plans.
- (2) The areas included in the Improvement Scheme are the parts of those included in the Official Representations which are coloured pink on the plans.
- (4) A Book of Reference to the deposited maps, in duplicate, accompanies this Scheme.
- (f) (1) Particulars of the areas included in the Scheme are given in the Book of Reference and the plans.
- (2) Parts of the lands comprised in the areas in respect of which the Official Representations were made have been excluded from the areas of the Improvement Scheme by the Corporation, and no lands have been included in such Scheme by the Corporation under Section 6 (1) (a) of the Act, as amended by the Housing, Town Planning, etc., Act, 1909.
- (5) All the lands included in the areas of the Improvement Scheme are intended to be taken compulsorily, and are coloured pink on the plans.

UNOCCUPIED DWELLING-HOUSES AND ROOMS OVER SHOPS.

Adverting to the Resolution of the City Council of the 7th February, 1923, relative to the following Motion :—

“ That in view of the fact that owing to the insufficiency of
 “ working-class houses, a vast number of the working community
 “ are, through no fault of their own, being compelled to inhabit
 “ overcrowded and insanitary dwellings, and are being repeatedly
 “ convicted in the Police Courts on charges of overcrowding, it be
 “ an instruction to the Housing Committee to immediately take
 “ steps to obtain possession of all large houses and other suitable
 “ large premises (empty business premises and rooms attached
 “ thereto) now vacant, also houses now being used as business
 “ premises, and which are fit for living purposes, and to convert
 “ and suitably divide such houses or premises (where necessary)

“into flats, in accordance with the requirements of a family, and
 “at a rental within reach of the wages paid to the working-class,”

the following Report was submitted :—

The Housing Committee are keenly alive to the unfortunate plight of thousands of persons who are applying to them for houses and whom it will be impossible to house for a number of years at the present rate of building, but under existing legislation the Committee have no power to alleviate this situation by adopting the suggestion made in the above Motion, namely, to obtain possession of vacant premises suitable for dwellings or for conversion into dwellings. They have, however, recently instructed the Medical Officer of Health to prepare an exhaustive return of vacant premises, and in every case disclosed on such return where it is possible for the premises to be used for dwellings as they now exist, or are easily converted into dwellings, they have caused a circular letter in the undermentioned terms to be addressed to owners of such premises :—

Dear Sir or Madam,

At a recent meeting of the Housing Committee, a report of the Medical Officer of Health was considered, in which attention was directed to the large number of unoccupied dwelling-houses within the City, and also unoccupied houses connected with shops and unoccupied rooms over shops.

There are at the present moment applications for houses amounting to many thousands, and in many instances the conditions under which the applicants are living are not only most unsatisfactory, but insanitary, notwithstanding that the applicants are able and willing to pay adequate rentals for suitable accommodation. The Housing Committee are anxious to secure the co-operation of owners of dwelling-houses, which are at present unoccupied, so as to secure the occupation of such of the dwelling-houses, or rooms, as are suitable.

In the report I find that the premises set out in the schedule attached are included, and I shall be glad to receive from you any proposal which you may desire to make in response to this enquiry, or if you would prefer to call at the office of the

Medical Officer of Health, he or his representative would be prepared to discuss the matter with you.

Awaiting your reply.

Having regard to the success which ensued upon the issue of a circular letter in somewhat similar terms some years ago, the Committee look forward with some confidence to the favourable action of owners of property in response to their present appeal.

In reference to the statement that persons who are compelled to inhabit overcrowded and insanitary dwellings are being convicted in the Police Courts on the charge of overcrowding, attention is drawn to the following table which clearly shews that, in spite of the fact that the cases of overcrowding have increased because it has been impossible to build sufficient houses to cope with the increased population, yet the number of convictions has greatly diminished, and further, it should clearly be understood that a conviction is never obtained except where overcrowding exists as a result of the failure of the occupants to make the best use of the accommodation at their disposal after repeated visits and advice from the Medical Officer of Health's Inspectors.

HOUSES LET IN LODGINGS.

Year.	No. of Houses Let in Lodgings on Register.	No. of Night visits for Prevention of Overcrowding	No. of Convictions for Overcrowding	Percentage of Convictions to Number of Visits.
1916	16,827	22,199	636	2·86
1917	16,635	21,746	508	2·33
1918	16,870	19,524	220	1·12
1919	14,636	23,350	191	0·81
1920	15,080	24,596	85	0·34
1921	15,332	24,851	45	0·18
1922	15,802	23,910	50	0·20

In accordance with the instructions of the Housing Committee in April, 1923, the Medical Officer of Health submitted a return of:—

- (a) Unoccupied dwelling-houses within the City (not connected with shops), together with an Analysis of Rents.
- (b) Unoccupied dwelling-houses connected with shops (shops also unoccupied).
- (c) Unoccupied houses over shops (shops occupied).

From this Return it would appear that in regard to the unoccupied houses, and unoccupied houses connected with shops, out of a total of 767 dwellings, 434 are for sale, in 99 cases tenancies have been arranged, 79 houses were at the time of inspection to let, and the remaining 155 houses are derelict and unfit for human habitation.

Of the 513 dwellings "For Sale" or "To Let" only 19 were under 10/- per week, the remainder ranging from £26 per annum upwards. In 350 cases the rent is over £50 per annum.

With regard to the 306 shops with rooms over, which are apparently unoccupied, in 102 instances the only entrance is through the shop, 30 have a front entrance, and the remaining 174 are entered from the rear by a side or rear passage.

It will be appreciated that the Committee do not possess any powers to enforce the occupation of vacant dwellings, but a circular letter sent to the various owners would, in all likelihood, have the effect of ensuring their co-operation in effecting the occupation of such of the premises as are suitable.

(A)

UNOCCUPIED HOUSES.

(Not connected with Shops.)

Number of Dwelling-houses "to Let"	...	...	52	
Number of Dwelling-houses "For Sale"	...	...	375	
			—	427
Number of dwelling-houses in respect to which tenancies have been arranged, but are at present unoccupied			89	
Number of houses derelict and unfit for human habitation	...	...	...	151
			—	240
Total number of Unoccupied Dwelling-houses	...	...		667
(Of this number 28 are included in "Unhealthy Areas.")				

ANALYSIS OF RENTS OF HOUSES AND SHOPS "TO LET" OR "FOR SALE."

Number of Houses at 5s. per week and under ...	...	...	4
do. over 5s. and under 8s. per week ...	...	...	7
do. over 8s. and under 10s. per week ...	...	...	8
do. over £26 per annum and under £30 p.a....			18
do. over £30 per annum and under £40 p.a....			56
do. over £40 per annum and under £50 p.a....			52
do. £50 per annum and upwards ...	...	...	282
Total ...			427

(B) UNOCCUPIED HOUSES CONNECTED WITH SHOPS.
(Shops also unoccupied.)

Number of Houses and Shops to Let ...	...	...	27
Number of Houses and Shops for Sale ...	...	...	59
			86
Number of Houses and Shops in respect to which tenancies have been arranged, but are at present unoccupied ...	...	...	10
Number of Houses and Shops derelict and unfit for human habitation ...	...	...	4
Total number of Unoccupied Houses and Shops (not included in (A)) ...	...	...	100

ANALYSIS OF RENTS OF HOUSES "TO LET" OR "FOR SALE."

No. of Houses and Shops from £26 and under £30 p.a. ...	4
do. £30 and under £40 p.a. ...	5
do. £40 and under £50 p.a. ...	9
do. £50 and upwards p.a. ...	68
Total number of Houses and Shops ...	86

(C) UNOCCUPIED HOUSES OVER SHOPS.
(Shops occupied.)

The number of unoccupied houses over shops, situated in different parts of the City ...	...	...	...	306
Approximate number of rooms in connection with the above				1,221

Entrance to rooms over Shops :—

By Front entrance	...	...	...	...	...	30
,, side entrance	...	...	...	...	...	42
,, passage at rear	...	...	...	...	...	131
,, through the shop only	...	...	...	...	...	102
Unfit for human habitation	...	...	...	...	...	1
Total						306

PITT STREET AREA.

In April, 1923, the Housing Committee requested the Medical Officer of Health to consider and report further as to whether any steps could be taken in providing housing accommodation in the vicinity of the above Area, and the Medical Officer of Health submitted the following Report :—

The question of providing increased housing accommodation in the above Area has from time to time been before the Committee. In October, 1907, and in April, 1910, in consequence of a deputation waiting upon the Committee, the Surveyor and Medical Officer reported on the question of undertaking a Housing Scheme in this Area.

In the Report of 1910 the Committee pointed out that approximately 85 insanitary houses had been demolished, but since this date 84 tenement dwellings have been erected in Sparling Street, Jordan Street, and Gore Street. The greater portion of the sites previously considered by the Committee for the erection of dwellings is Corporation leasehold property, and although many of the dwellings are old and worn, and in some cases structurally dilapidated, the amount of insanitary property on the Areas is not great, and the policy of the Committee has hitherto been to deal with Areas solely from the point of view of their insanitary condition.

The following schedule gives in a comparative form the particulars concerning each of the Areas which were previously before the Committee, and were also suggested by a deputation of residents in 1910 as suitable for the erection of dwellings. With

regard to Area "B," a portion of this site is vacant land, and this land is to be utilised in connection with the erection of public baths and wash-houses.

Sites.	Total No. of Houses in Area.	Sanitary.	Insanitary.	Sub-let.	Population.
"B"	22	20	2	12	83
"C"	24	20	4	12	196
"D"	46	38	8	27	286
	92	78	14	51	565

Of the 92 houses on this Area, 91 are occupied.

There are a few pieces of vacant land in St. Peter's Ward, but all are so small in area as to be unsuitable for the erection of dwellings.

There is, however, at the present time an Area which might be rendered available for building, but it was not available at the time when previous inspections of the Area were made. This is the site at present occupied by the disused Park Lane Industrial Schools, and the vacant land at the rear of them. This site is unquestionably the least unsuitable in the district under consideration, and furthermore, presents the advantage that building could be proceeded with without disturbing any house at present in occupation, and a scheme would be possible which would set the houses back a suitable distance from the main road. Furthermore, so soon as the buildings were completed the miserable and dilapidated tenements scattered in small groups in the vicinity could be forthwith demolished.

There is no other part of the district which presents an Area of this character, and any attempt to deal with any other groups of buildings would involve the demolition of an unduly large proportion of dwellings which are not in themselves insanitary, but all of which are occupied.

WOOLTON AREA.

The City Council have erected 12 new dwellings at the corner of Speke Road and School Lane, Woolton, and these dwellings are now occupied, and a further 12 houses are being erected.

With regard to the 55 dwellings on the Quarry Street Area, in respect to which Closing Orders were made in November, 1921, 40 have been improved or re-constructed, and in 15 instances the work is in progress.

HOUSING OF THE WORKING CLASSES ACTS, 1890—1909.

In view of the shortage of dwellings no Closing Orders were made under the above Act during the year, but the City Council have approved of four Official Representations under the Act, namely, Burlington Street, Hopwood Street, Rankin Street, and Great Richmond Street, which include a total of 490 houses.

The approximate number of insanitary houses existing on the 1st January, 1923 (including Added Areas), were as follows:—

Number of Courts	...	...	...	...	299
Number of Court Houses	...	...	...	...	1,632
Approximate number of Front Houses	...	...	...	...	932

The courts and houses included in the aforementioned four Official Representations have not been deducted.

RE-HOUSING.

NEW DWELLINGS IN SUBURBS.

The Housing Committee have entered into contracts for the erection of the following dwelling-houses:—

				" A "	" B "	Totals.
Elms House Estate	...	...	...	252	—	252
Larkhill Estate	...	...	...	470	1,583	2,053
Fazakerley Estate	...	...	...	62	150	212
Edge Lane Drive Estate	...	...	...	491	290	781
Walton and Clubmoor Estate	...	...	...	471	409	880
Allerton	...	...	...	224	786	1,010
Partly Developed Estate	...	...	...	—	554	554
Woolton	...	...	...	24	—	24
				1,994	3,772	5,766

On 1st June, 1923, of the above, 1,505 "A" type and 3,291 "B" type (4,796 in all) were completed and occupied; while 518 "A" type and 452 "B" type (970 in all) were in course of erection.

"A" type contains 1 Living Room and 3 Bedrooms.

"B" type contains 1 Living Room, Parlour, and 3 Bedrooms.

			"A"	"B"	Total.
Completed	...	...	1,505	3,291	4,796
In course of erection	...	...	518	452	970
			<hr/>	<hr/>	<hr/>
Total	...	...	2,023	3,743	5,766
Thus there are	...	...	43	29	72
houses not yet commenced.					

In addition to the above, 488 wooden bungalows have been converted from military huts for temporary occupation as dwellings on a site at Knotty Ash formerly used as a military camp, and all of these huts are tenanted, most of them since the early part of 1920.

NEW DWELLINGS IN SUBURBS.

Progress of Work, 1st June, 1923.

Statement shewing :—

Number of houses in Contracts	...	...	...	...	5,838
Number of houses completed and in progress	...	...	...	...	5,766
Bungalows completed	...	...	...	...	488
					<hr/>
					6,254
					<hr/>

On June 1st, 1923, of the 6,254 new dwellings, 5,230 were in occupation.

RE-HOUSING IN OLD CITY AREA.

The number of dwellings provided by the Corporation up to the present is 2,918; their situations and dates of opening are as follows:

Situation.	Date Opened.	Number of Tenements
St. Martin's Cottages	1869	124
Victoria Square	1885	270
Juvenal Dwellings	1891	101
Arley Street	{ 1897 } (1902/3)	46
Gildart's Gardens	{ 1897 } 1904	229
Dryden Street	1901	182
Kempston Street	1902	79
Kew Street	1902/3	114
Adlington Street Area	1902/3	272
Stanhope Cottages	1904	60
Mill Street	1904	55
Hornby Street	{ 1904 } 1906/7	449
Clive Street and Shelley Street	1905	83
Eldon Street	1905	12
Upper Mann Street	1905/6	88
Combermere Street	1909	49
Burlington Street	1910	114
Saltney Street	1911	48
Grafton Street	1911	60
Bevington Street Area	1912	218
Northumberland Street Area	1913	68
St. Anne Street Area	1914	72
Gore Street	1916	24
Jordan Street	1916	31
Sparling Street	1916	16
Penrhyn Street	1921	26
Mason Street	1921	28
Blenheim Street	In progress	—
Total	—	2,918

DESCRIPTION OF TENEMENTS.

Number of 1-roomed dwellings ...	193
Number of 2-roomed dwellings ...	1,337
Number of 3-roomed dwellings ...	1,105
Number of 4-roomed dwellings ...	283
	2,918
Number of self-contained dwellings (included in above)	133
Number of shops ...	31

RENTALS.

The rentals of the tenements vary from 2s. 6d. to 8s. 6½d., and those of the self-contained cottages from 8s. 6½d. to 10s. 3½d. per week.

CORPORATION TENEMENTS.
(Old City Area.)

VITAL STATISTICS.

Comparative Table.

ALL DWELLINGS.

Population, 1917	...	...	...	11,897
Population, 1918	...	...	...	12,139
Population, 1919	...	...	...	12,286
Population, 1920	...	...	...	12,664
Population, 1921	...	...	...	12,870
Population, 1922	...	...	...	13,402

	1917.		1918.		1919.		1920.		1921.		1922.	
	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.
Births	462	38.8	424	34.9	438	35.6	583	46.03	517	40.1	542	40.44
Deaths	259	21.7	358	29.4	262	21.3	279	22.03	246	19.1	245	18.28
Infantile Mortality	70	151.5 per 1,000 Births.	73	172.1 per 1,000 Births.	62	141.5 per 1,000 Births.	92	157.80 per 1,000 Births.	68	131.5 per 1,000 Births.	69	127.30 per 1,000 Births.
Deaths under 1 year												
Phthisis	18	1.5	27	2.2	24	1.9	26	2.05	27	2.09	26	1.9

CORPORATION TENEMENTS.
(Old City Area.)

VITAL STATISTICS.

Comparative Table.

RESTRICTED DWELLINGS.

Population, 1917	...	...	...	10,027
Population, 1918	...	...	...	10,235
Population, 1919	...	...	...	10,324
Population, 1920	...	...	...	10,642
Population, 1921	...	...	...	10,840
Population, 1922	...	...	...	11,361

	1917		1918.		1919.		1920.		1921.		1922.	
	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.
Births	380	37.8	357	34.8	371	35.9	485	45.57	431	40.6	452	39.78
Deaths	226	22.5	308	30.09	220	21.3	240	22.55	206	19.003	208	18.30
Infantile Mortality	62	163.1 per 1,000 Births.	63	176.4 per 1,000 Births.	52	140.1 per 1,000 Births.	81	167.01 per 1,000 Births.	54	125.2 per 1,000 Births.	62	137.16 per 1,000 Births.
Deaths under 1 year												
Phthisis	16	1.5	23	2.2	20	1.9	22	2.06	21	1.9	24	2.11

CORPORATION TENEMENTS.
(Old City Area.)

VITAL STATISTICS.
Comparative Table.

UNRESTRICTED DWELLINGS.

Population, 1917	...	...	...	1,870
Population, 1918	...	...	...	1,904
Population, 1919	...	...	...	1,962
Population, 1920	...	...	...	2,022
Population, 1921	...	...	...	2,030
Population, 1922	...	...	...	2,041

	1917.		1918.		1919.		1920.		1921.		1922.	
	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.	Total number.	Rate per 1,000.
Births	82	43·8	67	35·1	67	34·1	98	48·46	86	42·3	90	44·09
Deaths	33	17·6	50	26·2	42	21·4	39	19·28	40	19·7	37	18·12
Infantile Mortality	8	97·5 per 1,000 Births.	10	149·2 per 1,000 Births.	10	149·2 per 1,000 Births.	11	112·24 per 1,000 Births.	14	162·7 per 1,000 Births.	7	77·77 per 1,000 Births.
Deaths under 1 year												
Phthisis	2	1·0	4	2·1	4	2·03	4	1·9	6	2·9	2	0·97

CORPORATION TENEMENTS.

(Old City Area.)

VITAL STATISTICS.**ALL DWELLINGS.**

Statistics as to Birth Rate and Infantile Mortality Rate in Corporation Dwellings as a whole for the four years 1919 to 1922 :—

Year	Birth Rate per 1,000 of population.	Infantile Mortality. Deaths under 1 year per 1,000 births.
1919.....	35·6	141·5
1920.....	46·03	157·8
1921.....	39·27	150·35
1922.....	40·44	127·30

CORPORATION TENEMENTS.**ALL DWELLINGS.**

Average Birth Rate for the 4 years 1919 to 1922 ...	40·60
Average Death Rate for the 4 years 1919 to 1922 ...	20·10
Average Infantile Mortality Rate (under 1 year) 1919 to 1922	139·9
Average Phthisis Death Rate for the 4 years 1919 to 1922 ...	2·01

CELLARS.

On the 31st December, 1912, there were 1,614 cellars let as separate dwellings.

The present position in regard to these cellars is as follows :—

Number at present unoccupied ...	764
Number occupied as kitchens or wash-cellars ...	410
Number occupied as a kitchen and separately let with the front parlour ...	111
Number permanently closed ...	208
Number demolished ...	9
Number of cellars occupied as separate dwellings, 31st March, 1922 ...	112

NUMBER OF HOUSES ERECTED AND TAKEN DOWN
DURING THE YEAR ENDING DECEMBER, 1922.

DISTRICTS.						Number Erected.	Number Taken Down.
Scotland...	...	...	...	...	...	—	1
Exchange	...	...	...	...	...	—	5
Abercromby	...	...	...	...	...	—	15
Everton ...	...	...	...	...	...	—	59
Kirkdale...	...	...	...	...	...	—	—
West Derby (West)	...	...	...	...	...	19	3
Toxteth ...	...	...	...	...	...	—	3
Walton ...	...	...	...	...	...	347	—
West Derby (East)	...	...	...	...	...	1531	7
Wavertree	...	...	...	...	...	37	3
Toxteth (East) ...	...	...	...	...	...	—	—
Garston ...	...	...	...	...	...	48	3
Fazakerley	...	...	...	...	...	95	—
Woolton ...	...	...	...	...	...	166	1
Totals ...						2,243	100

Of the 2,243 dwelling-houses erected during 1922, 2,109 were built under the direction of the Housing Department, these forming parts of Government assisted schemes.

The City Building Surveyor has kindly furnished the following Return of Houses erected in the City:--

RETURN OF HOUSES ERECTED 1906-1922.

Annual Rental.	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
Under £12	243	115	...	149	...	132	...	68	37	...	6	...	...	...	...	...	...
£12 to £18	547	609	418	283	119	151	41	92	38	21	49	1	...	...	...	...	...
£18 to £25	1,039	1,022	1,102	1,369	1,279	768	717	537	539	337	99	16	1	...	...	1	...
£25 to £35	422	444	195	191	168	109	64	43	147	83	18	2	...	...	...	...	3
£35 and upwards..	202	152	135	157	144	74	56	27	74	57	14	3	...	11	276	1,794	2,240
	2,453	2,342	1,850	2,149	1,710	1,234	878	767	835	498	186	22	1	11	276	1,795	2,243

EXTRACT FROM THE CENSUS OF ENGLAND and WALES, 1921.

Population, Wards, Area and Number of Persons per Acre in the County
Borough of Liverpool.

WARDS.	Area in Statute Acres (Land and Inland Water).	TOTAL POPULATION.—CENSUS, 1921.			
		Males.	Females.	Persons.	Persons per acre.
ABERCROMBY	268	11,443	13,486	24,929	93·0
AIGBURTH	1,101	5,046	6,293	11,339	10·3
ALLERTON	1,589	943	1,127	2,070	1·3
ANFIELD	536	10,810	11,744	22,554	42·1
BBECKFIELD	175	11,969	13,197	25,166	143·8
BRUNSWICK	238	11,407	11,688	23,095	97·0
CASTLE STREET	78	237	275	512	6·6
CHILDWALL	1,285	733	857	1,590	1·2
DINGLE	376	18,208	19,363	35,751	99·9
EDGE HILL	248	16,727	17,712	34,439	138·9
EVERTON	210	17,196	18,697	35,893	171·0
EXCHANGE	82	1,701	1,782	3,483	42·5
FAIRFIELD	506	10,905	12,928	23,833	47·1
FAZAKERLEY	1,710	2,786	3,269	6,055	3·5
GARSTON	573	9,068	8,322	17,390	30·3
GRANBY	185	11,419	13,321	24,740	133·7
GREAT GEORGE	236	6,928	7,164	14,092	59·7
KENSINGTON	252	13,268	14,573	27,841	110·5
KIRKDALE	317	21,456	21,754	43,210	136·2
LITTLE WOOLTON	1,389	559	760	1,319	0·9
MUCH WOOLTON	792	2,087	2,329	29,255	5·6
LOW HILL	175	13,973	15,282	4,416	167·2
NETHERFIELD	129	15,856	16,979	32,835	254·5
NORTH SCOTLAND	282	10,742	11,463	22,205	78·8
OLD SWAN	1,140	13,967	15,821	29,788	26·1
PRINCE'S PARK	259	10,630	12,387	23,017	88·9
ST. ANNE'S	213	11,603	11,526	23,129	108·5
ST. DOMINGO	179	14,692	15,828	30,520	170·5
ST. PETER'S	225	3,350	2,319	5,669	25·2
SANDHILLS	611	13,402	13,245	26,647	43·6
SEFTON PARK EAST	490	8,989	11,799	20,788	42·4
SETFON PARK WEST	828	5,671	7,655	13,326	16·1
SOUTH SCOTLAND	238	11,266	11,671	22,937	96·4
VAUXHALL	244	3,940	4,307	8,247	33·8
WALTON	679	14,652	16,133	30,785	45·3
WARBRECK	691	13,863	15,659	29,522	42·7
WAVERTREE	1,076	10,934	12,993	23,927	22·2
WAVERTREE WEST	308	9,705	10,913	20,618	66·9
WEST DERBY	1,329	11,263	12,925	24,188	18·2
TOTALS	21,242	383,394	419,546	802,940	37·8

A

The following tables I, II, III, IV, and marked also A, B, C, D, are prepared pursuant to an instruction of the Ministry of Health.

CITY OF LIVERPOOL.

TABLE I.

VITAL STATISTICS OF WHOLE DISTRICT DURING 1922 AND PREVIOUS YEARS.

YEAR.	Population estimated to Middle of each year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS. ‡		NETT DEATHS BELONGING TO THE DISTRICT.			
		Uncor-rected Number.	Nett.		Number.	Rate.	of Non-residents registered in the District.	of Resi-dents not registered in the District.	Under 1 year of age.		At all ages.	
			Number.	Rate.					Number.	Rate per 1000 Nett Births.	Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1917.....	793061	17931	17906	22·6	13144	16·6	804	753	2071	115	13093	16·5
1918.....	798979	17171	17133	21 4	16077	20·1	1626	816	2137	124	15267	19·1
1919.....	804948	18845	18694	23·2	13710	17·3	923	496	2055	110	13283	16·5
1920.....	810947	25172	25039	30·9	13185	16·3	739	406	2826	113	12852	15·8
1921.....	817000	21988	21904	26·8	12075	14·8	781	372	2339	107	11666	14·3
1922.....	823095	21478	21467	26·1	12367	15·0	808	433	2052	96	11992	14·6

NOTES.—This Table is arranged to show the gross births and deaths registered in the district during the calendar year, and the births and deaths properly belonging to it with the corresponding rates. The rates should be calculated per 1,000 of the estimated gross population as stated in Column 2, without the use of the standardising factor for the district given in the Annual Report of the Registrar-General. In a district in which large Public Institutions for the sick or infirm seriously affect the Statistics, the rates in Columns 5 and 13 may be calculated on a nett population, obtained by deducting from the estimated gross population the average number of inmates not belonging to the district in such institutions.

*In Column 6 are to be included the whole of the deaths registered during the calendar year as having actually occurred within the district, but excluding the deaths of Soldiers and Sailors that have occurred in hospitals and institutions in the district. Information as to the number and causes of such deaths should, however, be given in the text of the report. (See Table D² in Appendix.)

In Column 12 is entered the number in Column 6, corrected by subtraction of the number in Column 8 and by addition of the number in Column 9. Deaths in Column 10 are similarly corrected by subtraction of the deaths under 1, included in the number given in Column 8, and by addition of the deaths under 1 included in the number given in Column 9.

‡“Transferable Deaths” are deaths of persons who, having a fixed or usual residence in England or Wales, die in a district other than that in which they resided. The deaths of persons without fixed or usual residence, *e.g.*, casuals, are not included in Columns 8 or 9, except in certain instances under 3 (*b*) below. In Column 8 the number of transferable deaths of “non-residents” are deducted, and in Column 9 the number of deaths of “residents” registered outside the district are added in calculating the net death-rate of the district.

The following special cases arise as to Transferable Deaths :—

(1) Persons dying in Institutions for the sick or infirm, such as hospitals, lunatic asylums, workhouses, and nursing homes (but not almshouses) must be regarded as residents of the district in which they had a fixed or usual residence at the time of admission. If the person dying in an Institution had no fixed residence at the time of admission, the death is not transferable. If the patient has been directly transferred from one such institution to another, the death is transferable to the district of residence at the time of admission to the first Institution.

(2) The deaths of infants born and dying within a year of birth in an Institution to which the mother was admitted for her confinement should be referred to the district of fixed or usual residence of the parent.

(3) Deaths from violence are to be referred (*a*) to the district of residence, under the general rule ; (*b*) if this district is unknown, or the deceased had no fixed abode, to the district where the accident occurred, if known ; (*c*) failing this, to the district where death occurred, if known ; and (*d*) failing this, to the district where the body was found.

Area of District in acres
(land and inland water) } 21,219.

Total population at all ages.....803,118 } At Census
Total families or separate occupiers ...173,823 } of
1921

TABLE II.
CITY OF LIVERPOOL.
Cases of Infectious Disease notified during the Year 1922.

NOTIFIABLE DISEASE	NUMBER OF CASES NOTIFIED.							
	At all Ages.	At Ages—Years.						
		Under 1	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and upwards.
Small-pox	2	...	...	...	1	1	...	...
Plague ... ..	...	...	...	...	...	...	...	...
Diphtheria (and Croup)...	953	22	340	383	142	61	5	...
Erysipelas	522	15	28	42	73	151	157	56
Scarlet fever	2419	27	734	1403	179	68	7	1
Typhus fever ... ..	...	...	...	...	...	...	...	...
Enteric fever	31	...	...	5	13	10	3	...
Puerperal fever	60	...	...	...	16	44	...	...
Cerebro-Spinal Fever	19	6	5	3	1	1	3	...
Poliomyelitis	11	...	4	4	...	2	1	...
Ophthalmia Neonatorum	669	669	...	...	...	...	...	...
Pulmonary Tuberculosis	1963	1	65	279	424	762	403	29
Tuberculosis other than Pulmonary	524	13	109	222	112	55	12	1
Anthrax	4	...	...	...	2	1	1	...
Measles and German Measles	2405	242	1184	943	27	9	...	...
Pneumonia and Influenzal Pneu- monia	1522	202	471	167	168	286	174	54
Malaria	43	...	...	1	12	27	3	...
Trench Fever ... ..	...	...	...	...	...	...	...	...
Dysentery	2	...	...	1	...	1	...	...
Encephalitis Lethargica... ..	5	...	...	...	3	...	2	...
Totals	11154	1197	2940	3453	1173	1479	771	141

City Hospital North, Netherfield Road.	} All within the City.
„ „ South, Grafton Street.	
„ „ East, Mill Lane, Old Swan.	
„ „ Fazakerley Isolation.	
„ „ do. Annexe.	
„ „ Sparrow Hall, Fazakerley.	
Sanatorium, Fazakerley.	
„ Park Hill.	} Outside the City.
„ Highfield.	
Deysbrook Hospital, West Derby.	

All the above Institutions are provided by the Corporation of Liverpool.



TABLE III.
CITY OF LIVERPOOL.
Causes of, and ages at, Death during the Year 1922.
(See notes at back.)

C

Causes of Death.	NETT DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING WITHIN OR WITHOUT THE DISTRICT (a).									Total Deaths whether of "Residents" or "non-Residents" in Institutions in the District (b).
	All ages.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 and up-wards.	
1	2	3	4	5	6	7	8	9	10	11
All causes { Certified (c)	11893	2029	751	498	399	574	1553	2883	3206	5580
Uncertified	99	23	4	2	2	3	9	16	40	8
1. Enteric Fever	6	—	—	—	—	1	2	3	—	4
2. Small-pox	—	—	—	—	—	—	—	—	—	—
3. Measles	171	39	78	48	5	1	—	—	—	95
4. Scarlet Fever	39	1	7	15	13	2	1	—	—	37
5. Whooping Cough	182	79	65	33	5	—	—	—	—	101
6. Diphtheria and Croup	91	7	22	31	26	3	1	1	—	74
7. Influenza	333	7	13	12	5	18	79	98	101	53
8. Erysipelas	26	3	—	—	1	2	3	12	5	24
9. Phthisis (Pulmonary Tuberculosis) ...	1086	5	12	21	51	237	462	270	28	588
10. Tuberculous Meningitis	98	14	19	20	24	13	6	2	—	69
11. Other Tuberculous Diseases	142	12	12	17	32	22	33	14	—	98
12. Cancer, malignant disease.	848	—	1	3	1	4	88	460	291	447
13. Rheumatic Fever	48	—	—	2	13	12	10	9	2	12
14. Meningitis (See note (d))	67	26	13	10	7	4	4	2	1	15
15. Organic Heart Disease.....	933	—	—	2	21	47	109	336	418	367
16. Bronchitis	1427	189	70	24	6	3	75	359	701	531
17. Pneumonia (all forms).....	1599	399	316	154	55	52	184	257	182	607
18. Other diseases of Respiratory organs	142	14	8	5	6	3	24	50	32	51
19. Diarrhoea and Enteritis. (See note (e))	270	224	46	—	—	—	—	—	—	114
20. Appendicitis and Typhlitis	43	—	—	2	8	10	14	7	2	55
21. Cirrhosis of Liver	28	—	—	—	1	—	5	16	6	10
21a. Alcoholism	10	—	—	—	—	—	2	7	1	4
22. Nephritis and Bright's Disease	305	6	—	2	11	20	52	132	82	188
23. Puerperal Fever	33	—	—	—	—	5	28	—	—	30
24. Other accidents and diseases of Pregnancy and Parturition	28	—	—	—	—	2	26	—	—	25
25. Congenital Debility and Malformation, including Premature Birth	739	714	16	4	3	2	—	—	—	249
26. Violent Deaths, excluding Suicide ...	333	37	23	39	36	23	56	82	37	221
27. Suicide	71	—	—	—	1	6	21	31	12	20
28. Other Defined Diseases	2872	275	34	56	69	81	272	741	1341	1492
29. Diseases, ill-defined or unknown	22	1	—	—	1	1	5	10	4	7
Totals	11992	2052	755	500	401	577	1562	2899	3246	5588
Sub-Entries included in above figures—										
Cerebro-Spinal Meningitis	11	4	—	5	2	1	1	1	—	12
Poliomyelitis	1	—	—	—	2	—	1	1	—	2
*Encephalitis Lethargica	3	—	—	—	—	3	—	—	—	2
*Anthrax	—	—	—	—	—	—	—	—	—	—
*Pneumonia	672	61	63	36	36	40	142	196	98	296

* Sub-Entries should here be made for other deaths which it is desirable to distinguish, on account of their administrative importance or special interest (e.g. any deaths from Anthrax, Typhus or Glanders, which have been included under 28, *Other Defined Diseases*; or deaths from pneumonia other than broncho pneumonia which have been included under 17, *Pneumonia all forms*).

NOTES TO TABLE III.

The classification and numbering of Causes of Death are those of the "Short List" on page XXV. of the Manual of the International List of Causes of Death, which has been consulted and followed in all cases of doubt.

- (a) All "Transferable Deaths" of residents, *i.e.*, of persons resident in the District who have died outside it, are *included* with the other deaths in Columns 2-10. Transferable deaths of non-residents, *i.e.*, of persons resident elsewhere in England and Wales who have died in the District, are in like manner *excluded* from these columns. For the precise meaning of the term "transferable deaths" see footnote to Table I.

The total deaths in Column 2 of Table III. equal the figures for the year in Column 12 of Table I.

- (b) All deaths occurring in institutions for the sick and infirm situated within the district, whether of residents or of non-residents, are entered in the last column of Table III.
- (c) All deaths certified by registered Medical Practitioners and all Inquest cases are classed as "Certified"; all other deaths are regarded as "Uncertified."
- (d) Exclusive of "Tuberculous Meningitis" (10), but inclusive of Cerebro-Spinal Meningitis.
- (e) Title 19 has been used for deaths from Diarrhœa and Enteritis of children under 2 years of age. (In the "Short List" deaths from Diarrhœa, and Enteritis under 2 years are included under Title 19; those at 2 years and over being placed under Title 28.)

TABLE IV.
CITY OF LIVERPOOL.
INFANT MORTALITY DURING THE YEAR 1922.

Nett Deaths from stated Causes at various Ages under One Year of Age.

(See Note (a) at back).

CAUSE OF DEATH.								Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 4 Weeks.	4 Weeks and under 3 Months.	3 Months and under 6 Months.	6 Months and under 9 Months.	9 Months and under 12 Months.	Total Deaths under One Year.
All Causes.	Certified	...	...	...	...	...	...	463	122	107	65	757	314	332	292	334	2029
	Uncertified	...	...	...	...	...	...	15	—	2	—	17	1	4	1	—	23
Small-pox	...	...	...	...	...	...	...	—	—	—	—	—	—	—	—	—	—
Chicken-pox	...	...	...	...	...	...	...	—	—	—	—	—	—	—	—	—	—
Measles	...	...	...	...	...	...	...	—	—	—	—	—	1	11	8	19	39
Scarlet Fever	...	...	...	...	...	...	...	—	—	1	—	1	—	—	—	—	1
Whooping Cough	...	...	...	...	...	...	...	—	—	—	1	1	9	21	25	23	79
Diphtheria and Croup	...	...	...	...	...	...	...	—	—	—	—	—	—	—	2	5	7
Influenza	...	...	...	...	...	...	...	—	—	—	—	—	1	1	4	1	7
Erysipelas	...	...	...	...	...	...	...	—	—	—	1	1	2	—	—	—	3
Tuberculous Meningitis	...	...	...	...	...	...	...	—	—	—	—	—	1	1	8	4	14
Abdominal Tuberculosis (b)	...	...	...	...	...	...	...	—	—	—	—	—	4	—	—	4	8
Other Tuberculous Diseases	...	...	...	...	...	...	...	—	—	—	—	—	1	1	1	1	4
Meningitis (not Tuberculous)	...	...	...	...	...	...	...	1	2	1	—	4	2	6	8	6	26
Convulsions	...	...	...	...	...	...	...	16	8	3	5	32	9	21	10	8	80
Laryngitis	...	...	...	...	...	...	...	—	—	—	—	—	1	1	2	—	4
Bronchitis	...	...	...	...	...	...	...	1	9	5	8	23	47	40	38	41	189
Pneumonia (all forms)	...	...	...	...	...	...	...	4	4	8	8	24	70	77	99	129	399
Diarrhoea	...	...	...	...	...	...	...	1	4	2	3	10	15	27	26	22	100
Enteritis	...	...	...	...	...	...	...	2	7	6	8	23	17	42	25	17	124
Gastritis	...	...	...	...	...	...	...	1	1	2	1	5	7	1	2	4	19
Syphilis	...	...	...	...	...	...	...	2	3	6	2	13	9	5	4	—	31
Rickets	...	...	...	...	...	...	...	—	—	—	—	—	—	2	2	3	7
Suffocation, overlying	...	...	...	...	...	...	...	4	—	1	—	5	6	5	1	1	18
Injury at Birth	...	...	...	...	...	...	...	13	1	1	—	15	—	1	—	—	16
Atelectasis	...	...	...	...	...	...	...	35	—	1	—	36	3	—	—	—	39
Congenital Malformations (c)	...	...	...	...	...	...	...	27	11	6	6	50	16	14	4	2	86
Premature Birth	...	...	...	...	...	...	...	319	45	35	13	412	23	5	1	—	441
Atrophy, Debility and Marasmus...	...	...	...	...	...	...	...	35	17	20	8	80	53	33	8	13	187
Other Causes	...	...	...	...	...	...	...	17	10	11	1	39	18	21	15	31	124
								478	122	109	65	774	315	336	293	334	2052

Nett Births in the year { Legitimate ... 20,705
Illegitimate ... 762

Nett Deaths in the year of { Legitimate Infants 1,890
Illegitimate Infants 162

NOTES TO TABLE IV.

- (a) The total in the last column of Table IV. should equal the total in column 10 of Table I., and in column 3 of Table III.
- (b) Under Abdominal Tuberculosis are to be included deaths from Tuberculous Peritonitis and Enteritis and from Tabes Mesenterica.
- (c) The total deaths from Congenital Malformations, Premature Birth, Atrophy, Debility and Marasmus, should equal the total in Table III. under the heading Congenital Debility and Malformation, including Premature Birth.

Want of Breast Milk is included under Atrophy and Debility.

- (d) For references to the meaning of any other headings, see notes attached to Table III.

In recording the facts under the various headings of Tables I., II., III. and IV., attention has been drawn to the notes on the Tables.

**PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1912, and REGULATIONS
(No. 2), 1918.**

Summary of Notifications during the period from the 1st January, 1922, to 30th December, 1922:—

Age-periods.	Notifications on Form A.												Total Notifica- tions on Form A.
	Number of Primary Notifications.												
	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and up- wards.	Total Primary Notifica- tions.	
Pulmonary—													
Males	1	32	89	63	117	106	195	207	172	93	19	1,094	1,151
Females	—	33	62	65	87	114	193	167	102	36	10	869	927
Non-Pulmonary—													
Males	8	62	64	50	38	18	12	9	3	2	1	267	280
Females	5	47	56	42	34	22	26	8	5	2	—	247	263

Age-periods.	Notifications on Form B.					Number of Notifications on Form C.	
	Number of Primary Notifications.				Total Notifica- tions on Form B.	Poor Law Institutions.	Sanatoria.
	Under 5	5 to 10	10 to 15	Total Primary Notifica- tions.			
Pulmonary—							
Males	—	—	—	—	—	77	86
Females	—	—	—	—	—	17	39
Non-Pulmonary—							
Males	—	4	—	4	4	7	2
Females	—	2	4	6	6	2	—

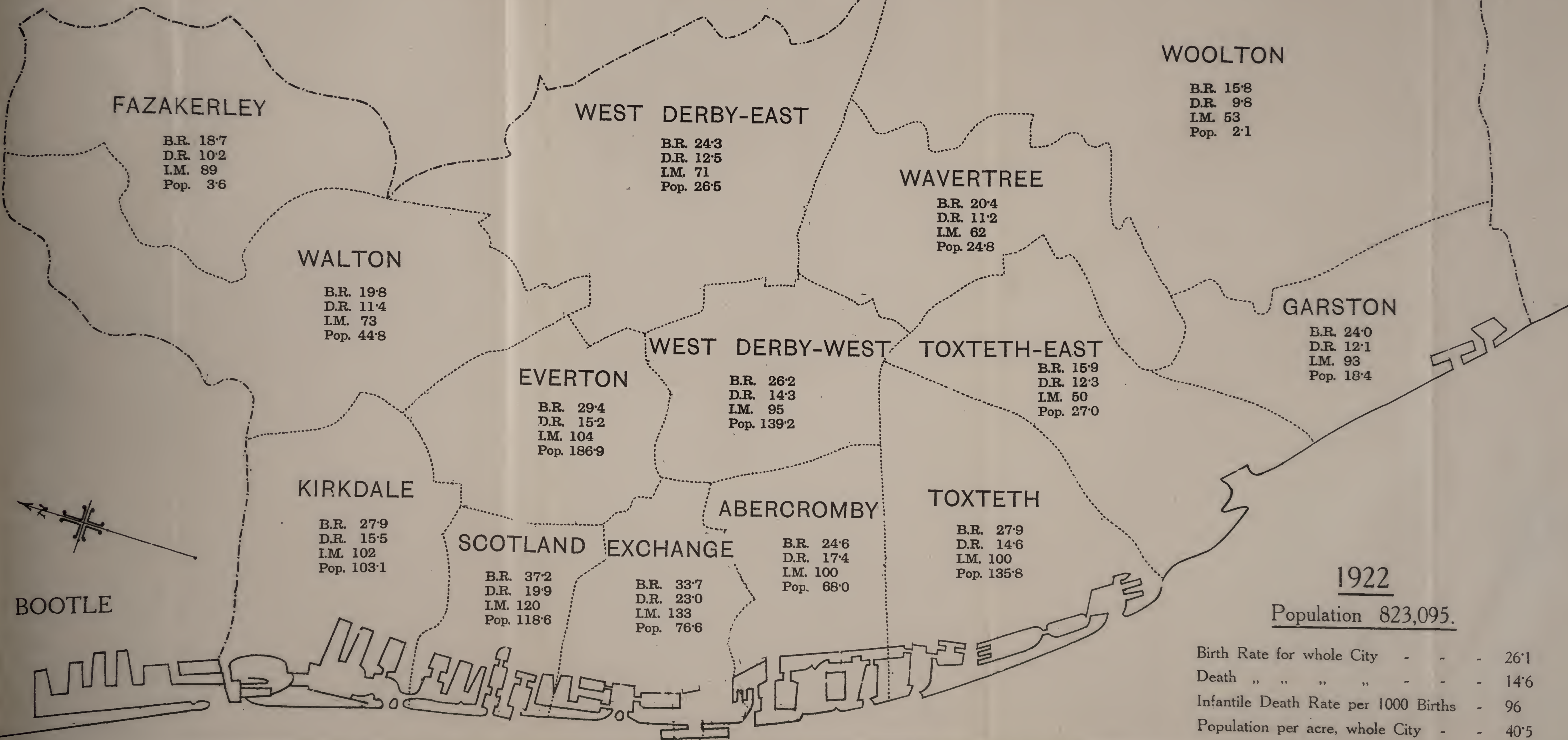
Form “ A ” is used by Medical Practitioners on first becoming aware that a patient is suffering from tuberculosis, unless he has reasonable grounds for believing that the case has already been notified.

Form “ B ” is used by School Medical Officers to make a weekly return to the Medical Officer of Health of all cases of tuberculosis coming under their notice in carrying out the duties of medical inspection of children in Public Elementary Schools.

Form “ C ” is for the use of the Medical Officers of Poor Law Institutions and Sanatoria to make a weekly return of cases admitted to their Institutions, and applies only to cases which have been previously notified on Form “ A.”

LIVERPOOL.

Diagram showing Birth Rate (B.R.) } per 1,000 of estimated
" " Death " (D.R.) } population.
" " number of deaths of Infants under One Year
" " out of every 1000 born (I.M.) }
" " estimated population per acre, excluding Docks and Quays and including Parks and Open Spaces (Pop). } In each of the districts of the City during 1922.



1922
Population 823,095.

Birth Rate for whole City	-	-	-	26.1
Death " " " "	-	-	-	14.6
Infantile Death Rate per 1000 Births	-	-	-	96
Population per acre, whole City	-	-	-	40.5

Diagram showing Birth Rate
 District
 number of
 out of a
 hundred
 and the
 number of
 deaths

LIVERPOOL

FAZAKERLEY-WHEAT

BR. 187
 GR. 103
 EM. 69
 DE. 30

WALTON

BR. 198
 GR. 114
 EM. 75
 DE. 46

KIRKDALE

BR. 218
 GR. 125
 EM. 100
 DE. 100

SEC

SEC

BOAT



DEATHS REGISTERED IN THE CITY OF LIVERPOOL,
DURING THE YEAR 1922.

CAUSE OF DEATH.	SEX.		AGE—BELOW																		DISTRICTS.																		WARD.																		CITY OF LIVERPOOL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
	Male.	Female.	AGE—BELOW																		DISTRICTS.																		WARD.																		CITY OF LIVERPOOL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
			1	2	3	4	5	10	15	20	25	30	40	45	50	60	65	70	80	90	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997

